

**2-1 Letter re Contracts No. 14-20-603-3613 through -3702, and -3704 through -3709, -5305,
to U.S. Department of the Interior, from Lance Corporation,
November 30, 1960, Doc. No. 14019.**

November 30, 1960
Santa Fe, New Mexico

RE: Contracts No. 14-20-603-3613
through -3702, and -3704
through -3709, and -5305

Mr. M. D. Long, Agency Realty Officer
U. S. Department of the Interior
Bureau of Indian Affairs
Navajo Agency
Window Rock, Arizona

Dear Mr. Long:

Your letter of November 29 has been referred to me for attention.

Since January 1, 1960, Lance Corporation has confined its drilling activities to Sections 12 and 18, T15N, R13W, McKinley County, New Mexico.

Royalties have been paid on ore produced from Sections 12 and 18 and leases covering these Sections are being omitted from this report.

Therefore, from January 1, 1960 through September 30, 1960 expenditures on the leases in question (Contracts No. 14-20-603-3613 through -3702, and -3704 through -3709, and -5305) include only lease rentals (of which you are aware) and indirect charges (overhead, etc.) amounting to \$24,896.73.

Yours very truly,

LANCE CORPORATION

HMC/mh

Hugh M. Craigie
Assistant Secretary

STATE OF NEW MEXICO)
COUNTY OF SANTA FE) ss:

Before me, a notary public, in and for said county and State on this 30th day of November, 1960 personally appeared Hugh M. Craigie to me known to be the identical person who subscribed the name of the maker thereof to the foregoing instrument as its Assistant Secretary and acknowledged to me that he executed the same as his free and voluntary act and deed, and as the free and voluntary act and deed of such corporation for the uses and purposes therein set forth.

Notary Public

My commission expires November 2, 1964

UNC0167157

UNITED STATES
DEPARTMENT OF THE INTERIOR
Bureau of Indian Affairs
Navajo Agency
Window Rock, Arizona

November 29, 1960

Lance Corporation
P. O. Box 1537
Santa Fe, New Mexico

Gentlemen:

This has reference to your uranium mining leases listed as follows:

Contracts Nos. 14-20-603-3613 through -3702, and
-3704 through -3709, and -5305.

As you have previously been advised, the requirement of a yearly development expenditure of not less than [REDACTED] per acre is not being enforced at the present time. However, a report of such expenditures is required by the lease terms and in accordance with Title 25, Code of Federal Regulations, 171.14(b), as follows:

"Within 20 days after the lease year, an itemized statement, in duplicate, of the expenditure for development under a lease for minerals other than oil and gas shall be filed with the Superintendent. The lessee must certify the statement under oath."

Please submit a sworn report for the past lease year within 20 days after showing the amount and character of the expenditures. You may omit from the report those leases on which are has been produced and royalties paid during the year. If no expenditures have been made, please submit a report indicating that no expenditures were incurred.

Sincerely yours,

M. D. Long
M. D. Long
Agency Realty Officer

November 18, 1960
Santa Fe, New Mexico

Mr. M. D. Long
Agency Realty Officer
Bureau of Indian Affairs
Navajo Agency
Window Rock, Arizona

Dear Mr. Long:

As you know, it is contemplated that we will ship ores from Section 12, 15N, 13W and Section 18, 15N, 13W to more than one mill.

Under our present commingling agreements, it is specified that the mills in question pay directly the royalties owed to the Indians to the Bureau of Indian Affairs. It is our desire, if more than one mill receives ore from Section 12, as an example, to average the shipments to the two mills and have one mill pay the royalties directly to your office. This is what takes place if the ore is shipped to one mill. It will not change the royalty payments to the Indians who own the allotments, but will make it simpler for us in our bookkeeping.

If this meets with your approval, I would appreciate it very much if you would notify us as soon as possible.

Sincerely,

LANCE CORPORATION

KDB/mh

Richard D. Bohan II
President

UNC0167159

**2-2 Letter re assignments of Navajo allotted land mining leases, to Homestake-Sapin Partners,
from U.S. Department of the Interior, August 3, 1962, Doc. No 14010.**

UNITED STATES
DEPARTMENT OF THE INTERIOR

Econ. Dev.
Realty

BUREAU OF INDIAN AFFAIRS 1967 AUG -6 AM 10: 04

Navajo Agency
Window Rock, Arizona

August 3, 1962

Homestake-Sapin Partners
P. O. Box 1537
Santa Fe, New Mexico

Gentlemen:

Enclosed are copies of assignments of Navajo allotted land mining leases, approved by our Gallup Area Office as follows:

1. Assignment of 10% to Homestake Mining Company from United Nuclear Corporation, formerly Sabre-Pinon Corporation, and
2. Assignment to Homestake-Sapin Partners of 65% from United Nuclear Corporation and 35% from Homestake Mining Company:

14-20-603-3613	through 14-20-603-3649	- - -	approved	July 25, 1962
14-20-603-3650	through 14-20-603-3675	- - -	approved	July 25, 1962
14-20-603-3676	- 10% Assignment	- - -	approved	July 26, 1962
	- 65% & 35% Assignment	- - -	approved	July 27, 1962
14-20-603-3677	through 14-20-603-3709	- - -	approved	July 27, 1962
14-20-603-5305	- - - - -	- - -	approved	July 30, 1962
✓14-20-603-3560	(3 Assignments approved)	- - -	approved	July 30, 1962

The two collective bonds, Nos. 9668463 and 9668464, dated November 9, 1961, each in the amount of \$15,000.00, were approved effective July 24, 1962. These bonds show Federal Insurance Company of New York, New York, as surety, and United Nuclear Corporation and Homestake-Sapin Partners as principals, supported by Consent of Surety dated May 18, 1962, for the assignment and transfer of the leases to Homestake-Sapin Partners.

Sincerely yours,

K. O. O'Leary

R. C. Clark
Acting Agency Realty Officer

Enclosures

Enclosures
2/7 Sent Copy to Russell, Howell Everett &
Le Roy Marshall
Also - 6 copies to Swent

UNC0167103

C

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2-3 Memo re Rentals due for the month of August, Teton Exploration Drilling Co.,

July 10, 1970, Doc. No. 14322.

426 - Teton



TETON EXPLORATION DRILLING COMPANY, INC.

105 E. Marcy Street

Santa Fe, New Mexico 87501

1970 JUL 10 AM 8:35 Phone 982-1989

MEMO

ok [signature]

TO: G. W. Hazlett AT: Santa Fe DATE: July 1, 1970
FROM: Guyton B. Hays AT: Santa Fe COPY TO: R. E. Day
C. J. Murphy
P. N. Shockey

SUBJECT: RENTALS DUE FOR THE MONTH OF AUGUST

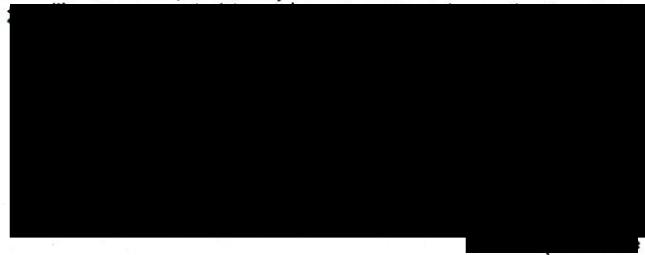
A report SEP 10 - check out on 7/21/70

August 3 Navajo Lease #5305 - Section 12, T15N, R14W
Mac # 1 Mine
Homestake Responsibility

Hand in on 7/21/70

August 28 Wood Lease - Section 27, T14N, R9W
Send Check to:

Check out on 7/21



[Signature]
Guyton B. Hays
Landman

5 P 1 7669



TETON EXPLORATION DRILLING COMPANY, INC.

105 E. Marcy Street

Santa Fe, New Mexico 87501

Phone 932-1989

1970 JUL -4 AM 8:15

M E M O

TO: G. W. Hazlett AT: Santa Fe DATE: July 1, 1970
FROM: Guyton B. Hays AT: Santa Fe COPY TO: ✓ R. E. Day
C. J. Murphy
F. W. Shockey

SUBJECT: RENTALS DUE FOR THE MONTH OF AUGUST

Aug. 1 - 5000 *file*
August 3 Navajo Lease #5506 - Section 12, T15N, R14W
Mac # 1 Mine
Homestake Responsibility

August 23 Wood Lease - Section 27, T14N, R9W
Send Check to:



G. B. Hays
Guyton B. Hays
Landman

2-4 Letter re stockpile and sales sheets for the Mac 2 Mine,
to U.S. Geological Survey, from United Nuclear-Homestake Partners,
July 17, 1970, Doc. No. 17877, pdf pp. 2-9.

UNITED NUCLEAR-HOMESTAKE PARTNERS

RECEIVED

P. O. BOX 98
GRANTS, NEW MEXICO
87010

JUL 21 1970

July 17, 1970

U. S. Geological Survey
Carlsbad, N. M.Mr. Robert S. Fulton
Regional Mining Supervisor
U.S. Geological Survey
P. O. Box 1716
Carlsbad, New Mexico 88220

Dear Mr. Fulton:

Enclosed you will find revised stockpile, and sales sheets for the Mac 2 Mine for January, February and March 1970. Copies of the sheets as originally furnished you are also enclosed.

We have a serious error in the manner that the original sheets were prepared due to the transfer of material from the low grade category to the ore category without discounting it from the low grade stockpile. This has, in effect, classed it as ore production during a time when there was no production since the mine was closed and the hoist and other facilities removed during December 1969.

A simplified presentation of the actual movement of ore and/or low grade material follows:

Stockpile classed ore, 1/1/70	10,627 ton
Stockpile classed low grade, 1/1/70	<u>6,900 ton</u>
Total stockpile, 1/1/70	17,527 ton
Milled, January 1970	<u>5,297 ton</u> ←
Stockpile, 1/31/70	12,230 ton
Milled, February 1970	<u>7,822 ton</u>
Stockpile, 2/28/70	4,408 ton
Milled, March 1970	<u>2,109 ton</u>
Stockpile, 3/31/70	2,299 ton

The two thousand two hundred ninety-nine (2,299) ton of material which remained as of March 31, 1970 was too low in grade to warrant hauling and milling.

The normal stockpile and sale sheets which have been furnished you were reconstructed to maintain continuity in reporting. I hope that you agree with this approach. The basic and essential accounting is, however, contained in the table above.

May 17, 1970

I am sorry that this error has been made in accounting and must confess that in all probability it would not have been bound even now had Mr. Hager not brought up a question about Black Jack #2. If we can be of any assistance in clarifying any point or in offering proof of our accounting, please do not hesitate to call on us.

Sincerely,

UNITED NUCLEAR-HOMESTAKE PARTNERS



Paul A. Matthews
General Manager

PAM:cp

xc: J. Hager
P. M. Price
M. Daugherty
R. Brassfield
G. H. Snyder (Mac 2 file)

SETTLEMENT STATEMENT

HOMESTAKE MINING PARTNERS

POST OFFICE BOX 98
GRANTS, NEW MEXICO

Revised 7-16-70
LIQUIDATION NO. 1012

DATE RECEIVED March 1970 BOUGHT OF United Nuclear-Homestake A.E.C. LICENSE NO. _____
ADDRESS OF SHIPPER P. O. Box 98 - Grants, New Mexico CONTRACT NO. _____
CLAIM NAME Mac #2 MINING DISTRICT Grants LOCALITY S17 & 18 T-15N R-13W
STATE New Mexico COUNTY McKinley

LOT NO.	WET WEIGHT POUNDS	H ₂ O %	DRY WEIGHT POUNDS	SETTLEMENT ASSAYS U ₃ O ₈	CONTENTS POUNDS U ₃ O ₈	STOCKPILE

See IBM summary attached - 816 is United Nuclear-Homestake Mac #2 Mine

RECEIVED
AUG 20 1970
U. S. Geological Survey
Carlsbad, N. M.

Wet Tons		Dry Tons		POUNDS	PRICE	AMOUNT
2,270.320		2,108.9685				
Base Price U ₃ O ₈				5,541.49	\$2.12	\$11,747.96
Premium for U ₃ O ₈ in excess of 4 lbs. Per Ton					.75	
Premium for U ₃ O ₈ in excess of 10 lbs. Per Ton					.25	
Total for Ore Before Development and Hauling Allowances						
Development Allowance					.50	\$11,747.96
Hauling Allowance: 52 Miles		2,270.320		5,541.49	.06	2,770.75
Total Gross Value of Ore				118,056.64		7,083.40
Deductions and Distribution				Ck. No.	Royalty	\$21,602.11
U.S. Bureau of Indian Affairs						1,409.76
Allottee #1868 - 47.5581%				\$		
Allottee #1182 - 52.4419%						
ACCOUNTING DISTRIBUTION	Dr		CR		BALANCE DUE	\$

ORE RECEIVED FROM
MAC #2 Mine

D. NUCLEAR- MESTAKE ☐ Uni.

Univ. of Clear Corporation

1

Homestake Mining Company

AVERAGE MOISTURE 7.1%

AVERAGE U308 ASSAY 0.131

[illegible]

HOMESTAKE-SAPIN PARTNERS

Revised 7-16-70

LIQUIDATION NO. 1006

DATE RECEIVED February 1970 BOUGHT OF United Nuclear-Homestake A.E.C. LICENSE NO. _____
ADDRESS OF SHIPPER P. O. Box 98 - Grants, New Mexico CONTRACT NO. _____
CLAIM NAME Mac #2 MINING DISTRICT Grants LOCALITY S 17 & 18 T-15N R-13W
STATE New Mexico COUNTY McKinley

LOT NO.	WET WEIGHT POUNDS	H ₂ O %	DRY WEIGHT POUNDS	SETTLEMENT ASSAYS U ₃ O ₈	CONTENTS POUNDS U ₃ O ₈	STOCKPILE
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See IBM summary attached - 816 is United Nuclear-Homestake Mac #2 Mine

RECEIVED

AUG 20 1970

U. S. Geological Survey
Carlsbad, N. M.

	Wet Tons	Dry Tons	POUNDS	PRICE	AMOUNT
Base Price U ₃ O ₈	8,468.270	7,821.7190	25,966.60	\$2.82	\$ 73,225.81
Premium for U ₃ O ₈ in excess of 4 lbs. Per Ton				.75	
Premium for U ₃ O ₈ in excess of 10 lbs. Per Ton				.25	
Total for Ore Before Development and Hauling Allowances					\$73,225.81
Development Allowance			25,966.60	.50	12,983.30
Hauling Allowance: 52 Miles	8,468.270	Wet Tons	440,350.04 TM	.06	26,421.00
Total Gross Value of Ore					\$112,630.11
Deductions and Distribution		Ck. No.	Royalty		
U.S. Bureau of Indian Affairs					8,787.10
Allottee #1868 - 27.3076%					
Allottee #1182 - 72.6924%					
ACCOUNTING DISTRIBUTION	Dr		CR		
				BALANCE DUE	

DATE FEBRUARY 1970

☒ United Nuclear Homestake Partners

ORE RECEIVED FROM UNITED NUCLEAR-HOMESTAKE

☐ United Nuclear Corporation

MAC #2

Homestake Mining Company

AVERAGE MOISTURE 7.63

AVERAGE U308 ASSAY 0.166

STOCK PILE NUMBER	DATE		SOURCE	LOT NUMBER	WET POUNDS		WET TONS		DRY TONS	ASSAY	POUNDS U308
	MO.	DAY									
1	2	03	70	816	2106940		1053470		9676865	1480	286435
1	2	04	70	816	2204380		1102190		10211470	1850	377824
1	2	05	70	816	2136160		1068080		9884340	900	177218
1	2	09	70	816	2076060		1038030		9535495	2440	465332
1	2	10	70	816	2055660		1027830		9452570	2290	432928
1	2	18	70	816	2013220		1006610		9370145	1980	371058
1	2	23	70	816	2211700		1105850		10284100	810	165630
1	2	26	70	816	2132420		1066210		9862205	1620	319535
					16936540		8468270		78217190		2596660

	Wet Tons	Dry Tons	POUNDS	PRICE	AMOUNT
Base Price U ₃ O ₈	5,737.480	5,296.5340			
Premium for U ₃ O ₈ in excess of 4 lbs. Per Ton			13,838.32	\$2.12	\$29,337.24
Premium for U ₃ O ₈ in excess of 10,lbs. PerTon				.75	
Total for Ore Before Development and Hauling Allowances				.25	
Development Allowance			13,838.32	.50	\$29,337.24
Hauling Allowance: 52 Miles	5,737.480	Wet Tons	298,348.96 ^M	.06	6,919.16
Total Gross Value of Ore					17,900.94
Deductions and Distribution		Ck. No.	Royalty		\$54,157.34
U.S. Bureau of Indian Affairs					3,520.47
Allottee #1868 - 60.8269%					
Allottee #1182 - 39.1731%					
ACCOUNTING DISTRIBUTION	Dr		CR		
				BALANCE DUE	\$

STOCK PILE NUMBER	DATE		SOURCE	LOT NUMBER	WET POUNDS		WET TONS	DRY POUNDS		DRY TONS	ASSAY	POUNDS U308
	MO.	DAY										
1	12	31	69	816	2009600	2053	1004300	1860334	930	1670	1220	226961
1	1	03	70	816	1748420	2063	874210	1611715	805	8575	1630	262710
1	1	06	70	816	1891940	2075	945970	1747108	873	5540	1490	260319
1	1	08	70	816	1910700	2085	955350	1759575	879	7875	1330	234023
1	1	14	70	816	1970680	2109	985340	1812965	906	4825	1480	268319
1	1	15	70	816	1943620	2112	971810	1801371	900	6855	730	131500
					11474960		5737480	10593068	529	65340		1383832

2-5 United Nuclear – Homestake Partners Property Status Report,
June 5, 1972, Doc. No. 14307, pdf pp. 3-5.

United Nuclear - Homestake Partners
Property List

1. Mac 1 Mine
(SE/4 Section 12, T15N, R4W & SW/4 Section 7, T15N, R13W)
2. Albers Ranch
(S/2 Section 3, S/2 & NE/4 Section 5, S/2 & NE/4
Section 7, T14N, R10W)
3. Section 10 Mine
(Ambrumex and Royomex Claims S/2 & NE/4 Section 10, T14N, R10W)
4. Dysart 3 or Mary 1 Mine
(NW/4 Section 11, T14N, R10W)
5. Dysart 1 Mine
(SW/4 Section 11, T14N, R10W)
6. Dysart 2 Mine (Ambrosia Tracts)
(SE/4 Section 11, T14N, R10W)
7. Section 13-14-10
(Sec. 13, T14N, R10W)
8. Fractional Claims
(Day, Nite, Sapin, Goof fractional claims in Sections
14 & 22, T14N, R10W)
9. Sections 15, 23 and 25 Mines
(Sec. 15, 23 & 25, T14N, R10W)
10. Section 36-14-10
(Sec. 36, T14N, R10W)
11. Section 32 Mine
(Sec. 32, T14N, R9W)
12. Section 2-13-9
(Sec. 2, T13N, R9W)
13. Hogan Mine
(S/2 Sec. 14, T13N, R9W)
14. Section 13-13-9
(Sec. 13, T13N, R9W)
15. Section 16-13-9
(Sec. 16, T13N, R9W)
16. Phil and Christmas Day Claims
(E/2E/2 Section 4, T12N, R9W)

1. Mac #1 Mine

Description - SW/4 Section 7, T15N, R13W

158.96 acres

Date of Lease - 5/21/58

Lessor - Bureau of Indian Affairs (Indian allotted land) Lease # 5305

Term - 10 years and as long thereafter as minerals are produced in paying quantities.

Rent - [REDACTED] acre per year

Advance Royalty - \$ [REDACTED] per acre per year allowed as credit against production royalty for lease year in which paid.

Royalty - Sliding scale based on mine value per dry ton as defined by Circular 5 base price and outlined in lease (i.e. [REDACTED] value and B [REDACTED] royal [REDACTED])

Obligation - \$ [REDACTED] per acre per year mine development or exploration.

Remarks - Non-producing

Description - SE/4 Section 12, T15N, R14W

160.00 acres

Date of Lease - 10/3/58

Lessor - Bureau of Indian Affairs (Indian allotted land) Lease # 5305

Term - 10 years and as long thereafter as minerals are produced in paying quantities.

Rent - \$1.00 per acre per year

Advance Royalty - \$ [REDACTED] per acre per year allowed as credit against production royalty for lease year in which paid.

Royalty - Sliding scale based on mine value per dry ton as defined by Circular 5 base price and outlined in lease (i.e. [REDACTED] bas [REDACTED] for [REDACTED])

Mac #1 Mine - Cont'd.

Obligation - [REDACTED] per acre per year mine
developments

Remarks- Underground reserves depleted

2-6 Environmental Analysis, Exploration Activities, Western Nuclear, Inc.

(prepared by U.S. Geological Survey), March 1, 1979,

Doc. No. 17921, pdf pp. 38-50.

Environmental Analysis

Exploration Activities
Western Nuclear, Inc.
Navajo Allotted Leases
N00-C-14-20-4594 thru 4599, 4901, 4902, and
5682 thru 5684
McKinley County, New Mexico

U. S. Geological Survey
Conservation Division
Area Mining Supervisor
Southern Rocky Mountain Area
P. O. Box 26124
Albuquerque, New Mexico 87125

Prepared By:
David R. Sitzler
Mining Engineer
March 1, 1979

I Description of Exploration Activities

A. Introduction

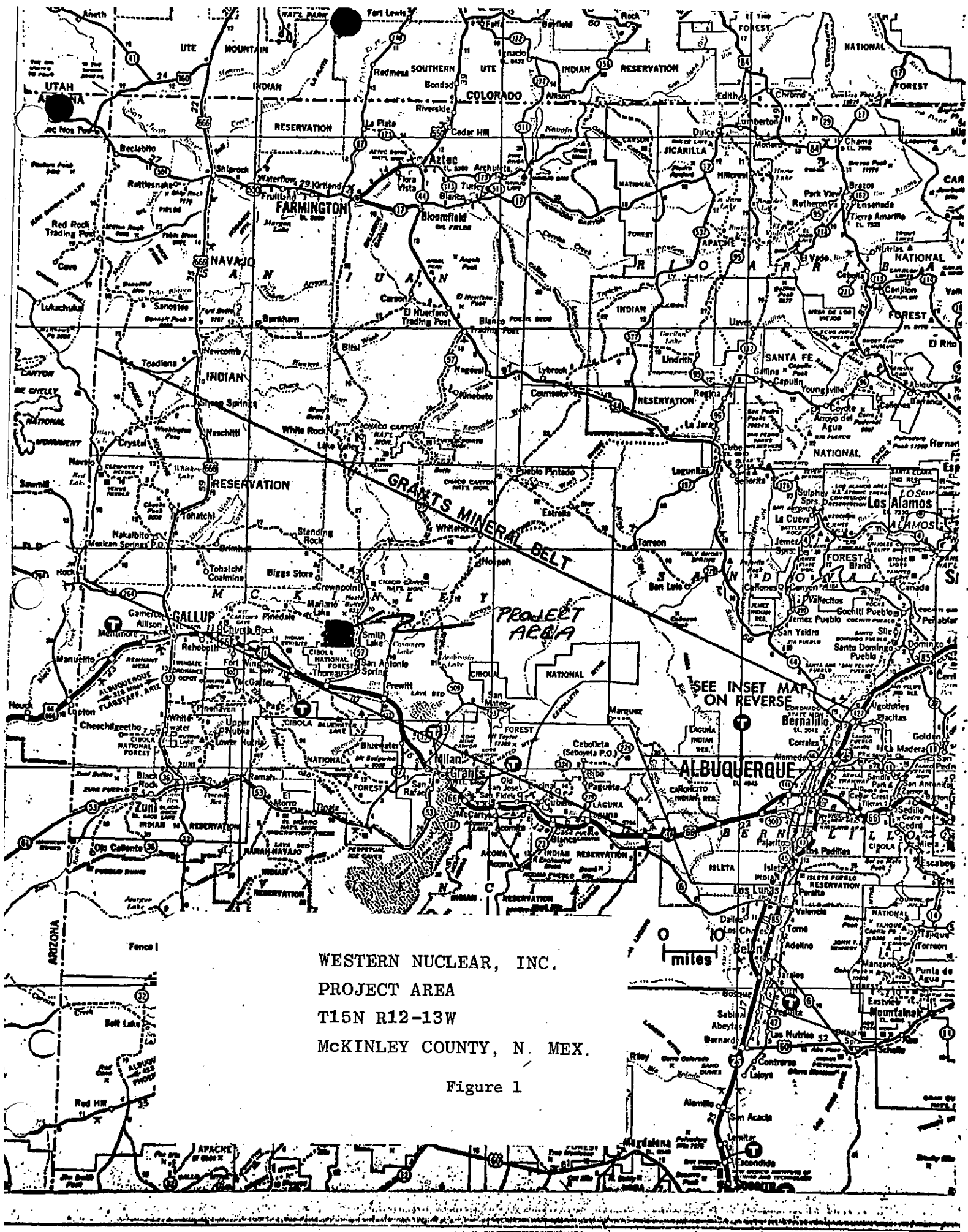
The proposed action is the determination of the environmental effects of the exploration activities conducted by Western Nuclear, Inc.

Western Nuclear has eleven Navajo allotted uranium leases covering 1760 acres in McKinley County, New Mexico (see Figure 1).

The legal land description of each lease is as follows:

<u>Lease Number</u>	<u>Location</u>
N00-C-14-20-4594	SW $\frac{1}{4}$, Sec. 29, T. 15 N., R. 12 W., NMPM
N00-C-14-20-4595	NW $\frac{1}{4}$, Sec. 29, T. 15 N., R. 12 W., NMPM
N00-C-14-20-4596	NE $\frac{1}{4}$, Sec. 30, T. 15 N., R. 12 W., NMPM
N00-C-14-20-4597	SE $\frac{1}{4}$, Sec. 30, T. 15 N., R. 12 W., NMPM
N00-C-14-20-4598	NW $\frac{1}{4}$, Sec. 26, T. 15 N., R. 13 W., NMPM
N00-C-14-20-4599	NE $\frac{1}{4}$, Sec. 26, T. 15 N., R. 13 W., NMPM
N00-C-14-20-4901	SW $\frac{1}{4}$, Sec. 26, T. 15 N., R. 13 W., NMPM
N00-C-14-20-4902	SE $\frac{1}{4}$, Sec. 26, T. 15 N., R. 13 W., NMPM
N00-C-14-20-5682	SE $\frac{1}{4}$, Sec. 17, T. 15 N., R. 13 W., NMPM
N00-C-14-20-5683	SE $\frac{1}{4}$, Sec. 18, T. 15 N., R. 13 W., NMPM
N00-C-14-20-5684	NW $\frac{1}{4}$, Sec. 20, T. 15 N., R. 13 W., NMPM

Western Nuclear obtained leases N00-C-14-20-4594 through -4599, -4901, and -4902 during the Bureau of Indian Affairs (BIA) competitive lease sale Number 6 held at Window Rock, Arizona on February 15, 1972. Leases N00-C-14-20-5682 through -5684 were obtained during uranium lease sale Number 7 held August 6, 1975.



Four of these leases (N00-C-14-20-4595 and -5682 through -5684) were held, prior to issuance to Western Nuclear, by Black Jack Corporation. Black Jack Corporation obtained these four leases during the Bureau of Indian Affairs, Uranium Lease Sale, Allotted Lands held at Window Rock, Arizona on September 5, 1957.

B. Exploration Activities

Upon acquisition of these leases Black Jack Corporation commenced exploration activities on three of the four leases. On lease -3695 four holes were drilled, on lease 3701 eighty-eight holes were drilled, and on lease 3702 six holes were drilled. No mineralization was found on leases -3695 and -3702 and they, along with -3656, were allowed to expire. Economic mineralization was found on lease 3701 and mining operations commenced. This mine was known as the Mac 2 and was mined by Homestake-Sapin Partners until 1970 when the mine was closed down and the lease cancelled.

After Western Nuclear obtained the Sale Number 6 leases they submitted an exploration plan to the USGS. This plan was received April 4, 1973 and was approved by the USGS on May 9, 1973. When Western Nuclear obtained the Sale Number 7 leases they were included as a supplement to the original exploration plan. To date, seven supplements have been submitted to and approved by the USGS. The work done includes 250 hole radon gas survey (each hole was 2.5' deep) and 1109 drill holes. The holes were drilled on the leases as follows:

<u>Lease</u>	<u>Number of Holes Drilled</u>	<u>Total Depth of Drilling</u>
NQO-C-14-4594.	14	6472
-4595	14	6984
-4596	17	7321
-4597	13	5696
-4598	378	170290
-4599	220	90433
-4901	33	12055
-4902	245	88755
-5682	10	4291
-5683	122	37965
-5684	43	17350

C. Exploration Procedures

Upon approval of the original exploration plan, Western Nuclear commenced exploration activities. The first step, prior to actually starting drilling activities, was to obtain archaeological clearance for all drill holes (this is a requirement for all the holes drilled on these leases). After archaeological clearance was obtained, field work began. This consisted of laying out the drill holes and radon gas survey locations.

The radon gas survey consisted of 250 2½ foot deep 4" inner diameter auger holes. These holes were drilled with a truck mounted auger where vehicle accessibility was available. Where the mounted auger could not reach the hole locations without construction of roads, those holes were dug by hand.

Into each hole a dielectric detector was inserted. The

holes were then filled and marked with a flag. Eight weeks later the detectors were retrieved and the holes filled.

Most of the drill hole locations (exact number unknown) were located so that no new roads would have to be constructed. All new road construction was coordinated with the Bureau of Indian Affairs, Eastern Navajo Agency, Branch of Roads and Branch of Land Operations as to location and construction details.

The holes were drilled with rubber tired, truck mounted, rotary drill rigs. Drill sites occupied an area of about 100' x 150' (<.3 acres). In many cases no leveling was required of the drill sites due to the levelness of the terrain. All drill sites have two mud circulation pits. These pits have a dimension of about 6' x 6' x 6'.

Upon completion of drilling, each hole is then probed with electric and radiometric logging devices to determine the wall rock self-potential, resistivity, and gamma energy. Lithologic logging of the drill cuttings is also performed.

As the probing of the hole is completed a series of abandonment and reclamation procedures begin. These procedures are as follows:

1. The drilling mud is prepared to meet New Mexico State Engineer requirements to prevent the commingling of ground water from the separate aquifers penetrated. These drilling mud specifications are:
 - a. gel strength of at least 20 pounds per 100 square feet

- b. filtrate volume not to exceed 13.5 cubic centimeters
 - c. wall cake of 1/32 inch minimum average thickness
 - d. mud weight is approximately 9 pounds per gallon
2. Each hole has a (±) six foot concrete plug into which an aluminum marker (flush with surface) is set. This marker has the hole number inscribed on it.
 3. Mud circulation pits are fenced until they can be backfilled and leveled to approximately the original contour.
 4. The entire site is harrowed, fertilized, and reseeded according to the seeding mixes and timetable established by the Bureau of Indian Affairs.
 5. All roads constructed by Western for exploration activities is harrowed, fertilized, reseeded, and water barred according to the requirements of the Bureau of Indian Affairs.
 6. All trash is buried in a separate pit on the site location.
 7. Abandonment and reclamation procedures are routinely inspected by the USGS.

In addition to the abandonment and reclamation procedures, measures are taken to prevent fires, soil erosion, air pollution, surface water pollution, ground water pollution, and destruction of wildlife and vegetation (particularly timber).

II Description of the Existing Environment

The lease area is situated in the Gallup District of the Colorado Plateau's physiographic province. The terrain is basically low rolling hills. The lower areas are weathered shale and siltstone beds. The higher areas are capped with more resistant sandstones with interbedded shales. The highest topographic feature within the proposed exploration area is 7,602 feet above sea level. The lowest topographic elevation is approximately 7,400 feet above sea level. The maximum relief in the area is approximately 210 feet.

The area in which the lease property is contained is considered to be semi-arid. The rainfall averages from five to eight inches per year. There are no perennial streams in the area. Streamflow occurs for only short durations after periods of significant precipitation. Any streamflow which does occur drains into the Puerco River system. The annual mean temperature is 58°.

Existing vegetation in the area consists of wild grasses, sagebrush, scrub Junipers and small Pinon trees. The continued dry spell and overgrazing has resulted in a serious depletion of the surface grasses. Native grasses are almost nonexistent in the area. The basic remaining grasses are blue gramma with traces of brouse and gutterizza. Even though the grass cover has deteriorated due to overgrazing, the land surface and grasses on the lease property are in somewhat better than other allottees properties in the area, especially those properties in the Crownpoint area.

Wildlife in the area is typical of northwest New Mexico. It consists of rabbits, gophers, rattlesnakes, horned lizards, mice and others. An occasional coyote or bobcat may inhabit the area.

The existing land use of the lease property is occasional grazing by sheep or goats.

Figure 2 is a columnar geologic section for the southeastern Ambrosia Lake area. The Dakota Formation is the highest stratigraphic member to outcrop in the lease area. The primary host for uranium mineralization is the Poison Canyon tongue of the Morrison Formation. The drilling program is intended to explore the Poison Canyon Member for uranium mineralization. Structurally, the beds dip gently north at about 1 degree. Occasionally, normal faults displace the beds 10 to 15 feet. No geologic hazards, such as toxic or explosive gases are known to exist in the area, and no unusual conditions are expected.

Two potential aquifers will be penetrated by the drilling operations. These are the Dakota sandstone and the Poison Canyon member of the Morrison Formation. Little formation water is expected due to the close proximity to the outcrop.

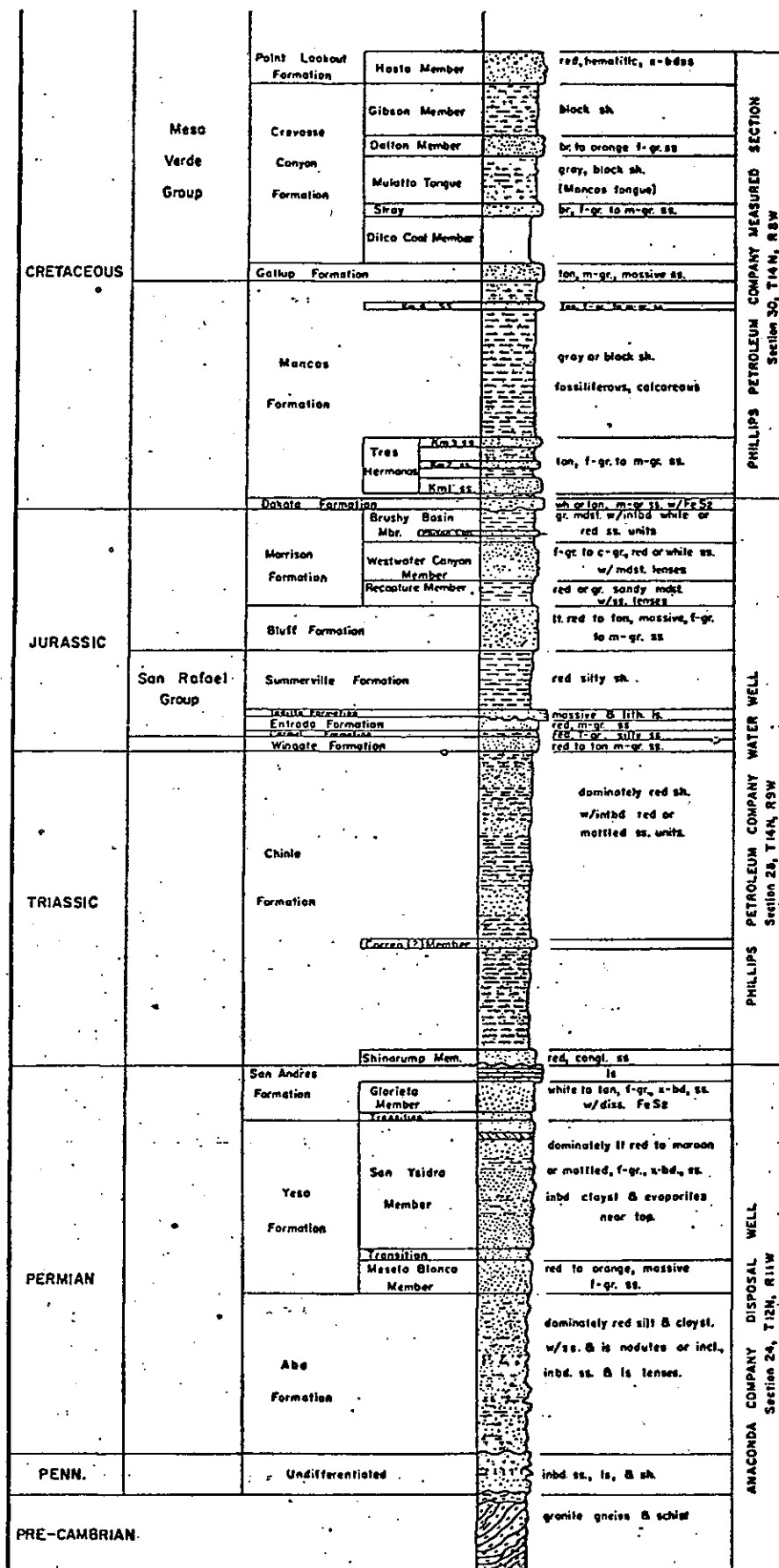


Figure 2

COMPOSITE COLUMNAR SECTION SOUTHEASTERN AMBROSIA LAKE AREA

III Unavoidable Adverse Environment Effect

The only appreciable unavoidable adverse effect on the environment would be the disturbance of a portion of the leased land surface by the construction of access roads and drill sites and the resultant destruction of the accompanying vegetation. Implementation of the reclamation and revegetation requirements and periodic inspections by authorized BIA and USGS personnel during and upon completion of exploration should provide for satisfactory rehabilitation of the affected lands within a reasonably short period of time. However, successful revegetation would be wholly dependent upon the presence of sufficient amounts of topsoil and precipitation.

Western Nuclear has been very successful in the abandonment and reclamation of their drill sites. So far no roads have been reclaimed.

IV Alternative to the Proposed Action

At the present time there are no known substitutes for drilling as a tool to determine the quality and extent of uranium deposits^{*}. Therefore, the only alternative to the proposed action would be to refuse to allow this exploration.

*(Radon gas surveys locate concentrations of radium which can be associated with uranium.)

V Determinations

I determine that these environmental effects of exploration activities does not constitute a major Federal Action significantly affecting the quality of the human environment in the sense of NEPA, Section 102(2)(c), and is not highly controversial.


Area Mining Supervisor

**2-7 Rautman, Christopher A., "Geology and Mineral Technology of the
Grants Uranium Region 1979," 1980, Doc. No. 4250, pdf pp. 2-3.**

EXPLORATION IN GRANTS URANIUM REGION SINCE 1963

by William L. Chenoweth, U.S. Department of Energy, Grand Junction, Colorado 81502, and
Harlen K. Holen, U.S. Department of Energy, Albuquerque, New Mexico 87110

Abstract

The Grants uranium region is the largest uranium area in the United States. As of January 1, 1979, the region accounted for 40 percent of the domestic uranium-ore production and contained 53 percent of the domestic reserves in the \$30 per pound forward-cost category. Since 1963, the region has expanded to the north and east, primarily through the efforts of exploration programs of major oil companies. Exploration has been influenced by the availability of land rather than by the use of geologic models. During this period, nearly 65 million ft of surface drilling for uranium has been completed in the region. The average drilling depths have increased from approximately 200 ft to over 1,600 ft. The discovered reserves and the favorable geology for undiscovered potential resources are expected to maintain the position of the Grants uranium region as the nation's principal source of uranium for years to come.

Introduction

The Grants uranium region has been the source of more uranium production than any other area in the United States. During the period 1950-1978, underground and open-pit mines produced 135,891 tons of uranium oxide (U_3O_8). This amounts to 40 percent of the total United States uranium-ore production. The majority of this production has come from bedded deposits in sandstones of the Morrison Formation with minor production from the Todilto Limestone and Dakota Sandstone. A significant amount of uranium also has been recovered from mine waters (table 1).

The early exploration history of the region is well documented in the New Mexico Bureau of Mines and Mineral Resources' Memoir 15 and elsewhere (Melancon, 1963; Hilpert, 1969), and it will not be repeated here. However, one erroneous statement continues to appear in the literature and should be corrected. According to a letter the Atomic Energy Commission (AEC) received from Louis Lothman in 1958, he did not find radioactivity in the cuttings of an oil well on Ambrosia dome; rather, he used the cuttings and logs to ascertain drilling depths to the Morrison Formation. This wildcat project penetrated ore-bearing sandstone in the Westwater Canyon Member of the Morrison Formation on the second hole drilled, and the initial Ambrosia Lake deposit was discovered in April 1955.

ACKNOWLEDGMENTS—Publication of this report is authorized by the U.S. Department of Energy, Grand Junction, Colorado, Office. This report is an outgrowth of the continuing liaison of the Department of Energy (DOE) and its predecessors, the Energy Research and Development Administration (ERDA) and the Atomic Energy Commission (AEC), with the uranium in-

dustry in the Grants region. We owe special thanks to Bette Learned for compiling and assembling the statistical data presented in this report.

Exploration from 1963 to 1979

Status in 1963

When Memoir 15 was published in 1963, production was recorded from 47 properties in the Grants uranium region. These properties included 21 at Ambrosia Lake, 6 in the Poison Canyon trend, 14 in the Todilto Limestone, and 2 each in the Blackjack, West Ranch, and Laguna areas. Production in 1963 was 5,140 tons U_3O_8 , a sharp decline from an all-time high of 7,892 tons in 1962 (fig. 1). Total production through 1963 was 46,451 tons U_3O_8 , which represents 34 percent of the total domestic ore production to that date.

As calculated by the AEC in 1963, reserves were 80,000 tons U_3O_8 , amounting to 50 percent of the nation's reserves in the \$8 per pound U_3O_8 forward-cost category. The AEC geologists estimated that potential resources of the region in 1963 were 110,000 tons U_3O_8 in the \$8 per pound category.

Data compiled by the AEC indicates that approximately 12,500,000 ft of surface drilling for uranium was done in the region from 1951 through 1963. Surface drilling in 1963 was approximately 300,000 ft with an average depth of about 200 ft. This drilling was done principally in the vicinity of the known mines. Very little drilling was done above the rim of the Gallup Sandstone. An exception was the northeast Church Rock area where Sabre-Piñon Corporation (now United Nuclear Corporation) was developing an orebody in the Westwater Canyon Member at an average depth of 1,600 ft.

The 1964-69 period

This time period witnessed a slight expansion of the region to the west, north, and east. In the summer of 1965, Kerr-McGee obtained exploration permits for a block of Navajo tribal land adjacent to Sabre-Piñon Corporation's northeast Church Rock orebody. Drilling by Kerr-McGee discovered the Church Rock I orebody (fig. 2, locality 3) in late 1965 and the Church Rock II orebody (locality 2) in 1968. West of the old Church Rock mine, United Nuclear Corporation discovered orebodies in sec. 7, T. 16 N., R. 16 W., and in sec. 12, T. 16 N., R. 17 W. (locality 1) in 1967. These discoveries were in an area where previous drilling by Phillips Petroleum had encountered mineralized material in widely spaced drill holes.

Extensions of the Blackjack No. 2 ore trend occurred in 1967 when Homestake-Sapin Partners discovered the Mac No. 1 deposit (locality 14) to the northwest of that mine and the Mac No. 2 deposit (locality 15) to the southeast. These deposits all occur in a sandstone bed in the lower part of the Brushy Basin Member of the Morrison Formation.

A slight westward expansion of the Ambrosia Lake area occurred in 1968 when W. Rodney DeVilliers discovered orebodies in the Poison Canyon Sandstone in the Brushy Basin Member in secs. 8 and 18, T. 14 N., R. 10 W. (localities 19 and 20). In this area, previous drilling had shown the Westwater Canyon to be oxidized and unfavorable; however, sandstones in the lower part of the Brushy Basin Member were unoxidized and found to contain ore.

In March of 1969, Gulf Mineral Resources announced the discovery of an orebody in the Mariano Lake area (locality 13). This

TABLE 1—SUMMARY OF URANIUM PRODUCTION, 1950-1978, GRANTS URANIUM REGION.

Formation	Number of Properties	Type of Mines	Years of Production	Production Tons U_3O_8
Morrison	133	Underground, two large open pits	1951 to present	131,231
Todilto	43	Underground and open pit	1950 to present	2,993
Dakota	9	Underground	1951 thru 1970	246
Mine water	—	—	1963 to present	1,354
Breccia pipe	1	Underground	1953 thru 1956	67
Total				135,891

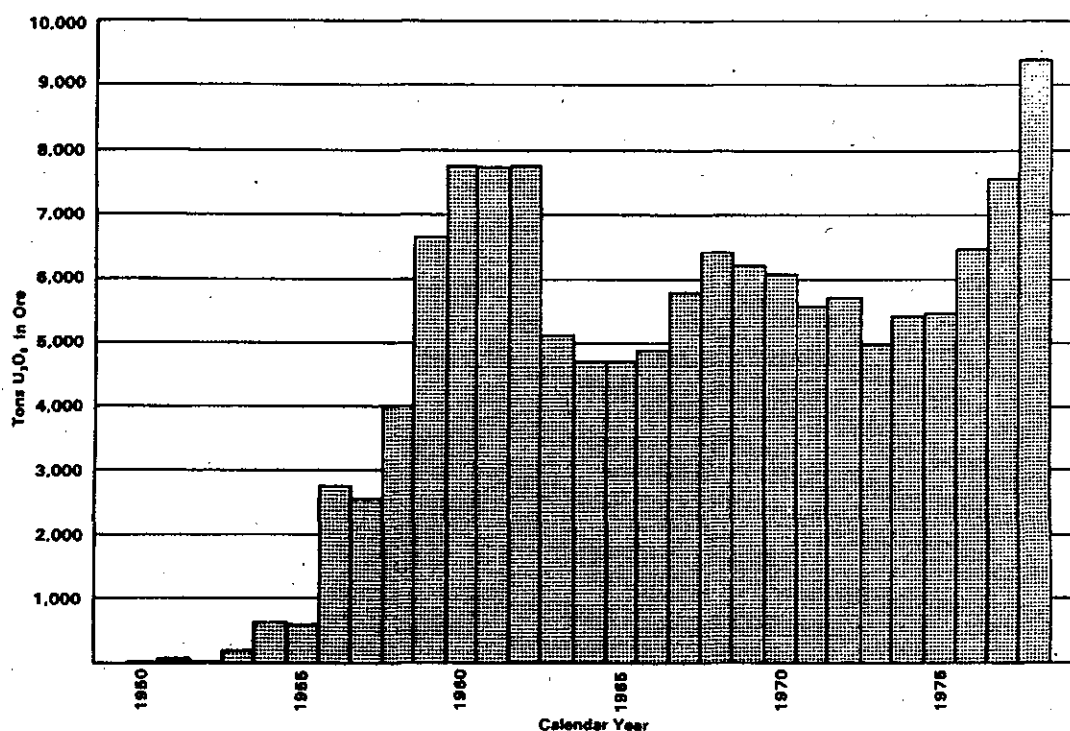


FIGURE 1—URANIUM PRODUCTION, GRANTS URANIUM REGION.

discovery represented the northwestward extension of the Black-jack No. 2 and Mac No. 1 deposits, which occur in a Brushy Basin sandstone.

Eastward expansion of the Ambrosia Lake area occurred in the fall of 1968 with the discovery of ore at a depth of 2,700 ft in the Westwater Canyon Member on the Lee Ranch (locality 23), northwest of San Mateo, by the Fernandez Joint Venture (Kerr Addison Mines, Noranda Mines, Amerada Hess Corporation). In the east Ambrosia area, Ranchers Exploration and Development Corporation discovered the Johnny M deposit (locality 21) in sec. 7, T. 13 N., R. 8 W., in 1969. At about the same time, Kerr-McGee began developing ore on their Roca Honda claims (locality 22) in secs. 9 and 10, T. 13 N., R. 8 W.

Gulf Minerals, drilling on a Kerr-McGee farmout, discovered ore north of Ambrosia Lake in the West Largo area (locality 18) in 1969 at a depth of 2,200 ft in the Westwater Canyon Member.

During 1967 and 1968, exploration by the Anaconda Company continued to extend the Paguate deposit to the south (locality 25). In 1969, Reserve Oil and Minerals Corporation began expanding the reserves at the L-Bar deposit (locality 26), which had originally been discovered by Anaconda prior to the publication of Memoir 15. Both deposits are in the Jackpile sandstone part of the Brushy Basin Member.

In 1969, exploration on the eastern side of Mount Taylor by Humble Oil (now Exxon Minerals) on the L-Bar Ranch (localities 30 and 31) and by W. Rodney DeVilliers near Marquez (locality 29) identified ore in the Westwater Canyon Member where only the Jackpile sandstone of the overlying Brushy Basin Member had been explored previously.

During this six-year period, 11,796,042 ft of surface uranium drilling was completed in the region (fig. 3). The average depth was 546 ft.

The 1970-74 period

This period saw the greatest expansion of the region since the publication of Memoir 15, as major oil companies continued well-funded exploration programs in all parts of the area. Eastward extension of the Ambrosia Lake continued. In March of 1970, drilling by the Bokum Resources Corporation pene-

Index to deposits shown on fig. 2

no.	name	controller
1	Mancos	United Nuclear
2	Church Rock 2	Kerr-McGee
3	Church Rock 1	Kerr-McGee
4	Narrow Canyon	Pioneer Nuclear
5	Dalton Pass	United Nuclear-TVA
6	North Trend	Mobil-TVA
7	South Trend	Mobil-TVA
8	Canyon	United Nuclear-TVA
9	Crownpoint	Conoco
10	Section 29	Conoco
11	Monument	Mobil-TVA
12	Nose Rock	Phillips
13	Mariano Lake	Gulf Minerals
14	Mac 1	Navajo allotment (unleased)
15	Mac 2	Western Nuclear
16	Ruby No. 1	Western Nuclear and New Mexico-Arizona Land-Reserve
17	Borrego Pass	Conoco
18	West Largo	Gulf-Kerr-McGee
19	Section 8	T. C. Davis
20	Section 18	T. C. Davis
21	Johnny M	Ranchers Exploration and Development Corporation
22	Roca Honda	Kerr-McGee
23	Main Ranch	Gulf Minerals
24	Mount Taylor	Gulf Minerals
25	Paguate (south)	Anaconda Copper
26	L-Bar	Sohio-Reserve
27	Marquez	Kerr-McGee
28	Marquez Canyon	Bokum Resources
29	Juan Tafoya	Bokum Resources
30	San Antonio Valley	Exxon
31	San Antonio Valley	Exxon
32	Rio Puerco	Kerr-McGee
33	Rio Puerco	Kerr-McGee
34	Bernabe Montaña	Conoco

2-8 United States Government Memorandum re listing of mineral mining companies,
to Area Director, Navajo Area, from Superintendent,
Eastern Navajo Agency, March 3, 1986, Doc. No. 1972.

memorandum

DATE: MAR 3 1986

REPLY TO
ATTN OF:

Superintendent, Eastern Navajo Agency

SUBJECT:

Abandoned Uranium Mines

TO:

Area Director, Navajo Area
Attn: Environmental Quality

ARPMO
SSST
NEPA/LS
APPRO
BUS
BR. S.
FILE

Enclosed is listing of the companies who have done hard mineral mining (uranium) on allotted lands or other lands as indicated, on which abandonment and reclamation have been monitored by Bureau of Land Management. To our knowledge, all mines have met the necessary requirements.

1. Mobil Oil Corporation:

- a. Contract No. N00-C-14-20-8372
- b. Location: NE/4, Section 22, T17N, R13W, McKinley County
- c. Land Status: Allotment No. 933.
- a. Contract No. N00-C-14-20-8371
- b. Location: NE/4, Section 21, T17N, R13W, McKinley County
- c. Land Status: Allotment No. 850
- a. Contract No. N00-C-14-20-8370
- b. Location: NE/4, Section 18, T17N, R13W, McKinley County
- c. Land Status: Allotment No. 921
- a. Contract No. N00-C-14-20-4916 and N00-C-14-20-4982
- b. Location: Section 28, T17N, R12W, McKinley County.

2. Cobb Resources Corporation:

- a. Contract No. N00-C-14-10-5672 (Moe or West Ranch Mine)
N00-C-14-20-5666 (Black Jack #2 Mine - No Activity
N00-C-14-20-5667 since 1981 - issued Cease and
Desist Order)
- b. Location: Section 32, T15N, R11W, McKinley County
- c. Land Status: Allotted Lands
- * Note: Section 33, T15N, R11W, McKinley County - private
lands also mined.

3. Gulf Mineral Resources Company - Mariano Lake Mine (Dakai):

- a. Contract No. N00-C-14-10-1345 - abandoned on or about August
N00-C-14-20-1349 1983;
N00-C-14-20-1351

MAR 03 1986

Buy U.S. Savings Bonds Regularly on the Payroll Savings Plan

OPTIONAL FORM NO. 10
(REV. 7-76)
GSA FPMR (41 CFR) 101-11.6
5010-112



- b. Location: NE/4, Section 11, and NW/4 Section 12, T15N, R12N, McKinley County
- c. Land Status: Allotment No. 1880 - NE/4
Allotment No. 1192 - NW/4

4. Homestack Mining Company - Mac #1 Minesite:

- a. Contract No. N00-C-14-20-0603 - 5305
- b. Location: Section 32, T15N, R11W, McKinley County
- c. Land Status: Allotted Lands.

5. Kerr McKee (Now known as Quivera Mining Company) - semi-active:

- a. Contract No. N00-C-14-20-4817
- b. Location: NE/4, Section 6, T13N, R9W, McKinley County
- c. Land Status: Allotment No. SF-062430

* Note: Mill tailings stored on allotment and is proposed for land exchange with company.

6. Koppen Mining Construction Company - Abandoned on or about August 1983:

- a. Contract No. N00-C-14-20-5631
N00-C-14-20-5632
N00-C-14-20-5625
N00-C-14-20-5627
N00-C-14-20-5629
N00-C-14-20-5620

- b. Location:
- c. Land Status: Allotted lands.

- a. Contract No. N00-C-14-20-4440
N00-C-14-20-4441
N00-C-14-20-4442
- b. Location: Section 6, T13N, R9W, McKinley County
- c. Land Status: Allotted lands.

7. Church Rock Mine - United Nuclear Corporation:

- a. Contract No. Refer to Area RPM - Minerals Section
- b. Location: Section 2, T16N, R16W, McKinley County - Tailing Site Navajo reservation, T12N, R16W Mine Site (No section, unurvey.)
- c. Land Status: Allotted and T.N.T. lands.

* Note: Correspondence indicates that Area Environmental Quality is in communications with company and memorandum dated 11/14/84 to Environmental Quality of HHS Survey for Area closed/restricted because of toxic contamination.

MAR 06

As of this date we have no information or facts indicating any locations of uranium mines which have been abandoned without reclamation. Should you need more information, please contact Ms. Darwina Morgan at Area RPM.

Edw. O. Plummer

Superintendent

I. Description of the Proposed Action

A. Introduction

The proposed action is an original exploration plan providing for surface drilling with subsequent downhole probing to discover and delineate subsurface uranium ore deposits. The plan was submitted May 30, 1978, by Anschutz Uranium Corporation in compliance with 25 CFR 177.6 and 30 CFR 231.10.

The involved property, Navajo Indian Allotment No. 1873, occupies the 160 acres of the southwest quarter of Section 7, Township 15 North, Range 13 West, in the Smith Lake-Mariano Lake area of McKinley County, New Mexico (Figures 1 and 2). Both the surface and mineral rights within the lease belong to Kess Wod or heirs as the case may be. The property is covered by Navajo Allotted Uranium Mining Lease NOO-C-14-20-5665 which Anschutz Corporation acquired April 10, 1978, by assignment from Cobb Nuclear Corporation. Cobb Nuclear, formerly Hydro Nuclear Corporation, originally acquired the lease October 8, 1975, through competitive bidding in Navajo Allotted Land Sale 7. Cobb Nuclear did not conduct uranium exploration within the lease.

B. Lease History

The involved property is adjacent to two abandoned, underground uranium mines (Figure 2). The Mac #1 Mine in the southeast quarter of Section 12, T15N, R14W, was operated under allotted mining lease 14-20-0603-5305, and the Geological Survey (USGS) considers this lease effective because United Nuclear-Homestake Partners annually processes small amounts of low grade ore stockpiled on the lease and pays royalties on the uranium recovered. The Blackjack #2 Mine was operated in the northeast, northwest and southeast quarters of Section 18, T15N, R13W, under allotted mining leases 14-20-0603-3698, -3699 and -3701, respectively.

These leases were all cancelled in 1970. Cobb Nuclear acquired leases N00-C-14-20-5666 and -5667 on the northeast and northwest quarters of Section 18 in 1975 and assigned these leases to Anschutz Corporation with lease -5665. Prior to the assignments, Cobb Nuclear conducted limited exploration within leases -5666 and -5667 without an approved exploration plan.

The involved property was also previously leased under mining contract 14-20-0603-3667. Ninety-six exploration boreholes were drilled under this contract, and all abandonment requirements were met prior to lease cancellation in 1973. While in effect, lease -3667 was also involved in a unitization agreement with lease -5305 of the Mac #1 Mine; however, no ore was produced from the property.

C. Proposed Exploration Procedures

The proposed exploration plan provides for the drilling of ninety-one boreholes within the subject lease. The majority of these holes would be drilled in the south half of the quarter-section, and many of the holes would be approximately 50-foot offsets to holes completed under the previous lease. New drilling in the relatively unexplored portions of the lease would be on a rough 200- by 200-foot grid pattern. It is anticipated that the drilling program would be completed in 3 1/2 months using one drilling unit. This unit would consist of one Failing 1500 or similar type drilling rig, one water truck, one pipe truck and one pickup truck per drilling shift. The unit would be periodically inspected by company personnel for safety standards and maintenance.

Each borehole would be rotary drilled with a maximum diameter of 5 inches unless modified to accommodate well casing. Average borehole depth would be approximately 400 feet. The holes would be probed with the results recorded on standard electrical logs consisting of gamma ray, self-potential and resistivity

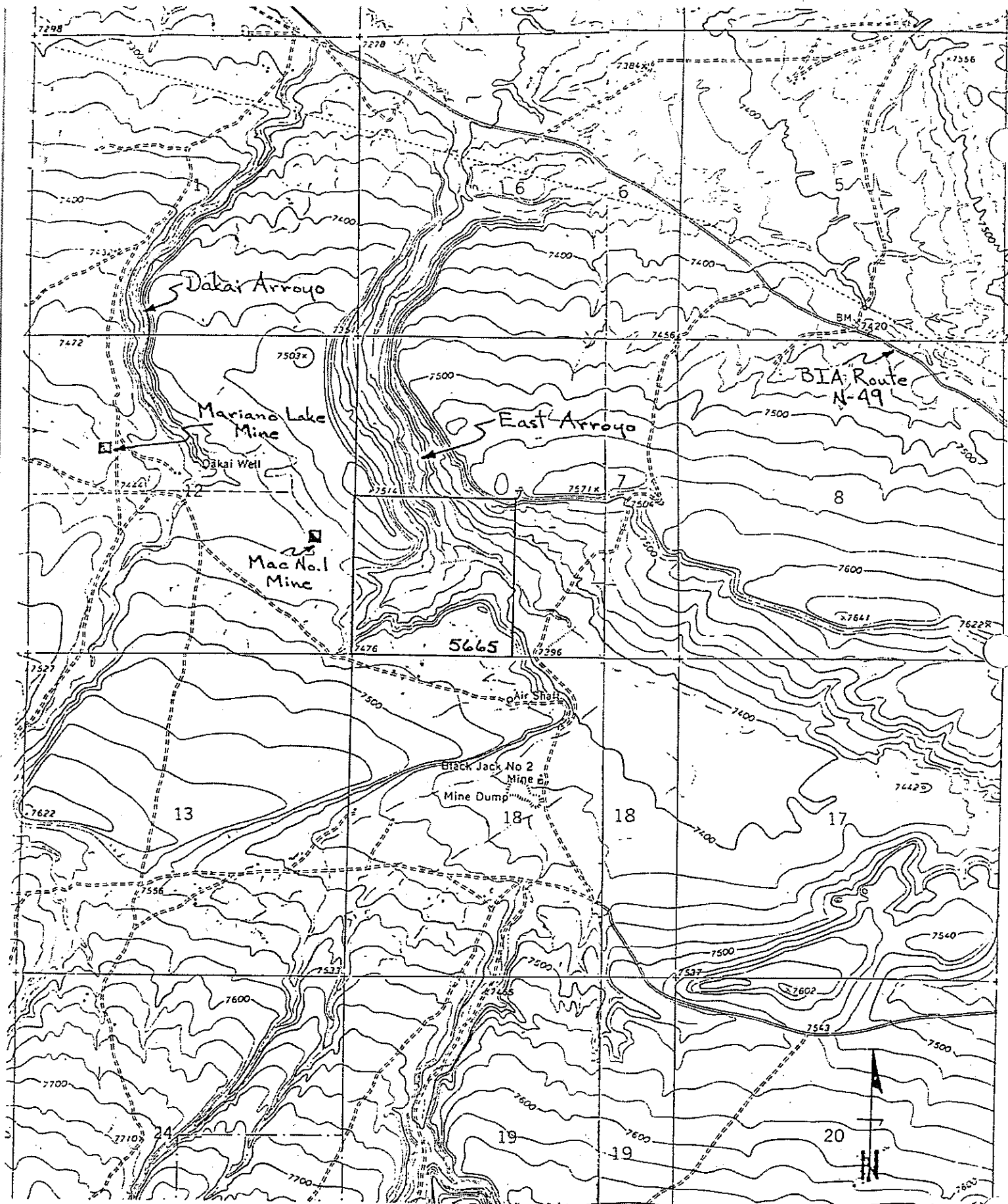


Figure 2
Topography Map

(USGS 7.5 Minute Quadrangles,
Mariano Lake and Hosta Butte Quads)

United Nuclear Corporation - references of several attachments
for exploration plans - 1980's

Current NM Navajo allotted O & G Leases

ADP's - Guidelines & Procedures

1979 Existing Uranium Leases

Mobil Corp. Uranium Lease Nos. NCO-C-14-20-7490-7483-7491
BIA - NCO-C-14-20-4938

1990 Vegetation Cover study at Amcoal mine,
McKinley County

TEDCO (exploration)

Quivera Mining Company (sub. Kerr McGee)

Relinquishment of Leases - 7455, 7456, 7487, 7488, 7494, 7497, 7498,
7500, and 8361 - Mobil Uranium Mining

Ray Williams Mining Co.

USGS Navajo Minerals Inventory - Project 5 year study

Amuran Company LTD

Conoco Inc. (Uranium)

Energy Reserves Group

Supplemental Exploration Plan (Conoco Inc.)

Barrego Pass & Crownpoint

Phillips Uranium Corp.

Pioneer Nuclear Inc.

UNC Teton Exploration Drilling, Inc.

Uranium Lease - expired

NM-McKinley County - Kerr-McGee Corporation - N00-C-14-20-3893 - Tribal
Ag - Apache - Depco, Inc. Midwest Oil Corp - N00-C-14-20-2987 - Tribal
NM - San Juan County, William C. Lages - N00-C-14-20-2978 - Tribal
NM - McKinley County, Kerr-McGee Corporation - N00-C-14-20-3786 - Tribal
NM - McKinley County, Kerr-McGee Corporation - N00-C-14-20-3785 - Tribal
NM - San Juan County, William C. Lages - N00-C-14-20-2978 - Tribal
NM - McKinley County, Continental Oil Company - N00-C-14-20-4457 - Allotted
NM - McKinley County, Gulf Oil Corporation - N00-C-14-20-4495 - Allotted

Western Nuclear, Inc. (Uranium) Allotted

Cobb Resource Corp - N00-C-14-20-5672 - allotted

Allotted:

Lease Nos. 14-20-0603-1433

N00-C-14-20-4443-4444-4445

N00-C-14-20-4453-4454

14-20-0603-5305

N00-C-14-20-5662, 5663, 5664 - Homestake Mining Co.

Kopper Mining Construction Company

N00-C-14-20-4440

N00-C-14-20-4443

N00-C-14-20-5620

N00-C-14-20-5631-5632

Gulf Minerals Resources Co.

N00-C-14-20-1345-1349-1351

INSPECTION REPORT

FILE COPY

Surname

INSPECTOR(S) John M. Andrews, Jr., Environmental Scientist
David R. Sitzler, Mining Engineer

DATE April 13, 1982

PARTICIPANT(S) _____

LESSEE/~~ALLOTTEE~~ United Nuclear-Homestake Part. OPERATOR Same

LOCATION Navajo Allotted Mining Lease 14-20-0603-5305; SE/4, Section 12, T15N, R14W, NMPM

MINERAL uranium OPN abandonment PRODUCTION _____ CHECKED _____

ACTIVITY No activities were taking place at the time of this inspection.

ENVIRONMENT The purpose of this inspection was to measure the gamma radiation levels around the mine site (see attached report).

SAFETY The mine site appears to be in a safe condition.

REMARKS Areas around the mine site, particularly around the buildings and shaft, have gamma levels in excess of recommended limits. These limits do not apply to mining but they are the only recognized limits available.

ORDERS ISSUED/RECOMMENDATIONS The area around the buildings and shaft will have to be covered to lower the gamma levels to the recommended limits.

Original: Area Director, Navajo Area Office, BIA
cc: File: Inspection file -5305

Inspection file: Sitzler, Andrews
Superintendent, ENA, BIA
DMM--Mining. SCR

David R Sitzler
PREPARER



Flora Johnson
United States Department of the Interior

BUREAU OF LAND MANAGEMENT

3550 Pan American Freeway, N.E.
P.O. Box 6770
Albuquerque, New Mexico 87107

IN REPLY REFER TO
Homestake Mining Co
14-20-0603-5305
3570 (017)
P192355610

JUL 18 1985

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Edward E. Kennedy
Director of Environmental Affairs
Homestake Mining Company
P.O. Box 98
Grants, New Mexico 87020

Dear Mr. Kennedy:

An inspection of the Mac I Mine Site (Navajo Allotted Mining Lease 14-20-0603-5305) was conducted April 16, 1985. All reclamation requirements in our November 17, 1983 letter have been met with the exception of radiation levels. Eight hotspots were found (see map). It is Homestake's responsibility to see that radiation levels at the mine site are no greater than 70 mr/hr. The eight hotspots were marked with stakes by personnel from this office. Topsoil should be placed upon these areas to bring the gamma radiation levels within acceptable limits.

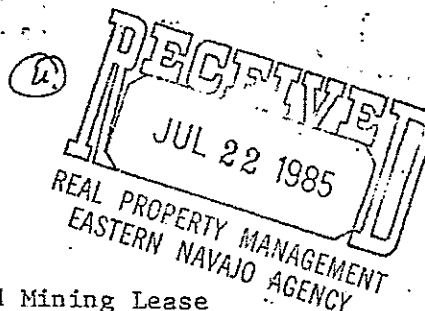
Thank you for your cooperation in this matter. If you have any questions about the reclamation, please contact George Tetreault of my staff at (505) 766-3114.

Sincerely,

Herrick E. Hanks
Rio Puerco Resource Area
Manager

Enclosure (1)

cc: Area Director, NAO, BIA
Superintendent, ENA, BIA



SOLID MINERALS

MO Albuquerque STATE NMDATE OF INSPECTION April 17, 1985

SERIAL NUMBER OF TRACT	HOLDER OF PRIMARY TRACT INTEREST	TRACT STATUS	NUMBER OF INSPECTIONS	HOURS OF INSPECTION ONSITE/TOTAL	COMMODITY	TRACT TYPE
COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4	COLUMN 5	COLUMN 6	COLUMN 7
N00-C-14-20-5305	Homestake Mining Co.	Inactive	1	4.0 / 6.0	Uranium	Lease
				/		
				/		
				/		
				/		
				/		
				/		
				/		
				/		
				/		

RECEIVED
JUL 22 1985
REAL PROPERTY MANAGEMENT
EASTERN NAVAJO AGENCY

TYPE OF INSPECTION (CHECK ONE) / / MINE / / EXPLORATION / XXX / MINE ABANDONMENT
/ / TECH EXAM, EA / / INACTIVE / / OTHER

PURPOSE OF INSPECTION Examination of reclamation.

BRIEF DESCRIPTION OF INSPECTION See attachment.

MINE NAME Mac 1 Mine DESIGNATED OPERATOR _____
 DATE ORIGINAL MINE PLAN SUBMITTED _____ DATE ORIGINAL MINE PLAN APPROVED _____
 DATE MODIFIED MINE PLAN SUBMITTED _____ DATE MODIFIED MINE PLAN APPROVED _____
 IF APPROVED PLAN IS PENDING MODIFICATION, GIVE BRIEF DESCRIPTION OF MODIFICATION: _____

DATE ORIGINAL EXPL. PLAN SUBMITTED _____ DATE ORIGINAL EXPL. PLAN APPROVED _____
 DATE MODIFIED EXPL. PLAN SUBMITTED _____ DATE MODIFIED EXPL. PLAN APPROVED _____

LM INSPECTOR(S) AND TITLES(S) George R. Tetreault, Jr., Mining Engineer; John Andrews,
 Environmental Scientist; Brian Lloyd, Volunteer
 SURFACE MANAGEMENT AGENCY FOR TRACT(S) Bureau of Indian Affairs

NAME, TITLE, AND OFFICE OF SMA PERSONNEL PARTICIPATING IN INSPECTION _____

NAME, TITLE, AND OFFICE OF OSM OR REGULATORY AUTHORITY PERSONNEL PARTICIPATING IN INSPECTION
None

NAME, TITLE, AND OFFICE OF COMPANY REPRESENTATIVE(S) PARTICIPATING IN INSPECTION _____

HOURS OF OFFICES TIME (PRE-INSPECTION) PREPARING FOR INSPECTION 0
 HOURS OF OFFICES TIME (POST-INSPECTION) REPORTING ON INSPECTION 1
 TOTAL TRAVEL TIME 1 TOTAL OFFICE TIME 1

IS A CONDITION OF NONCOMPLIANCE ENCOUNTERED DURING INSPECTION? / / YES / XX / NO
 IF YES, PREPARE NONCOMPLIANCE REPORT

IS AN UNDESIRABLE EVENT ENCOUNTERED DURING INSPECTION? / / YES / XX / NO
 IF YES, PREPARE UNDESIRABLE EVENT REPORT

PERSONNEL RESPONSIBLE FOR CONDUCTING INSPECTION

cc: Superintendent, ENA, BIA
 Oper. File: Allotted -5305, Homestake
 IR File
 File: Tetreault

George R. Tetreault, Jr.

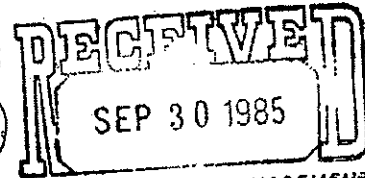


United States Department of the Interior

BUREAU OF LAND MANAGEMENT
3550 Pan American Freeway, N.E.
P.O. Box 6770
Albuquerque, New Mexico 87107

IN REPLY REFER TO
Homestake mi
Co. - 5305
3570 (017)

SEP 20 1985



REAL PROPERTY MANAGEMENT
EASTERN NAVAJO AGENCY

Memorandum

To: Area Director, Navajo Area Office, BIA
From: Area Manager, Rio Puerco Resource Area, BLM
Subject: Mac I Mine, Navajo Allotted Uranium Lease 14-20-0603-5305, Homestake Mining Company

The subject lease was inspected August 28, 1985, and found to be properly abandoned. However, there is an unresolved royalty issue that is being reviewed by the Minerals Management Service. We recommend that the lease be relinquished and the lessee's bonded liability be released upon resolution of this royalty issue. Please contact Minerals Management Service for an update on this matter.

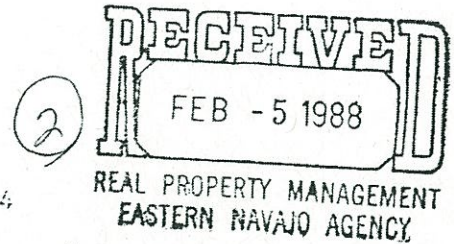
If you have any questions, please contact George Tetreault of my staff at (505) 766-3114.

Harold E. Hansen

Enclosure (Inspection Report)

cc: Superintendent, ENA, BIA

Navajo Area Office
P. O. Box "R"
Window Rock, Arizona 86515-0714



FEB - 2 1988

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Homestake Mining Company
P. O. Box 96
Grants, New Mexico 87020

Gentlemen:

This is to inform you that we have received the final clearance from the Bureau of Land Management on Mac I Mine, Navajo Allotted Uranium Lease No. 14-20-0603-5305. Therefore, the said lease is hereby cancelled and the lease's bonded liability is hereby released since resolution of the loyalty issue has been satisfied. The effective date of cancellation of the lease and bond liability is August 28, 1985, the date of inspection clearance.

Sincerely,

T. R. TIPPECONNIC

Assistant
Area Director

cc: BLM, Rio Puerco Resource Area,
BLM, Records Management Section, Albuquerque, NM
The Kelly Agency, P.O. Box 2105, Santa Fe, NM 87601
Superintendent, Eastern Navajo Agency
Attention: Laura Morris, Real Property Management, Allotment No. 1183
Chubb Pacific Indemnity Group, P.O. Box 2110, San Francisco, CA 94126
Irene Lewis, Probate Clerk, Surface Leasing

2-9 Inspection Report, Solid Minerals form, April 14, 1986, Doc. No. 17917, pdf pp. 2-5.

INSPECTION REPORT
SOLID MINERALS

DMO: Albuquerque

STATE: NM

Date of Inspection: April 14, 1986

Serial Number of Tract	Holder of Primary Tract Interest	Tract Status	Number of Inspections	Hrs. of Insp. Onsite/Total	Commodity	Tract Type
NOO-C-14-20-4598	Western Nuclear	inactive	1	0.4 / 1.3	uranium	lease
-4599	" "	"	1	0.4 / 1.2	"	"
-4901	" "	"	1	0.4 / 1.2	"	"
-5665	Cobb Resources Corp.	"	1	0.2 / 1.1	"	"
-5666	" "	"	1	0.2 / 1.0	"	"
-5667	" "	"	1	0.2 / 1.0	"	"
14-20-0603-1345	Gulf Minerals Co.	"	1	0.2 / 1.1	"	"
-1349	" "	"	1	0.2 / 1.0	"	"
-1351	" "	"	1	0.2 / 1.0	"	"
-5305	Homestake Mining Co.	"	1	0.8 / 3.3	"	"
				/		
				/		

Type of Inspection (Check One): / /Mine / /Exploration /X/Mine Abandonment
/ /Tech. Exam., EA / /Inactive / /Other

Purpose of Inspection: Quarterly Mine inspection.

Brief Description of Inspection: No activities were taking place, nor were there evidence that any had since last inspection. At all mine sites revegetation is progressing, at Mariano Lake is in excellent condition. Gamma counter was not working so Blackjack 2 and Mac 1 mine sites could not be checked.

Mine Name: Ruby Wells 3/Blackjack 2/Mariano

Date Orig. Mine Plan Submitted: Lake/Mac1

Date Mod. Mine Plan Submitted: Lake/Mac1

Designated Operator: _____

Date Orig. Mine Plan Approved: _____

Date Mod. Mine Plan Approved: _____

If Approved Plan is pending modification, give brief description of modification:

Date Orig. Expl. Plan Submitted: _____

Date Mod. Expl. Plan Submitted: _____

Date Orig. Expl. Plan Approved: _____

Date Mod. Expl. Plan Approved: _____

BLM inspector(s) and title(s): Jay W. Smith, Science Technician & David R. Sitzler, Mining Engineer

Surface Management Agency for tract(s): Bureau of Indian Affairs

Name, title, and office of SMA personnel participating in inspection: None

Name, title, and office of OSM or Regulatory Authority personnel participating in inspection: NONE

Name, title, and office of Company Representative(s) participating in inspection: None

Hours of office time (pre-inspection) preparing for inspection: 0.4

Hours of office time (post-inspection) reporting on inspection: 0.8

Total Travel Time: 8.8

Total Office Time: 1.2

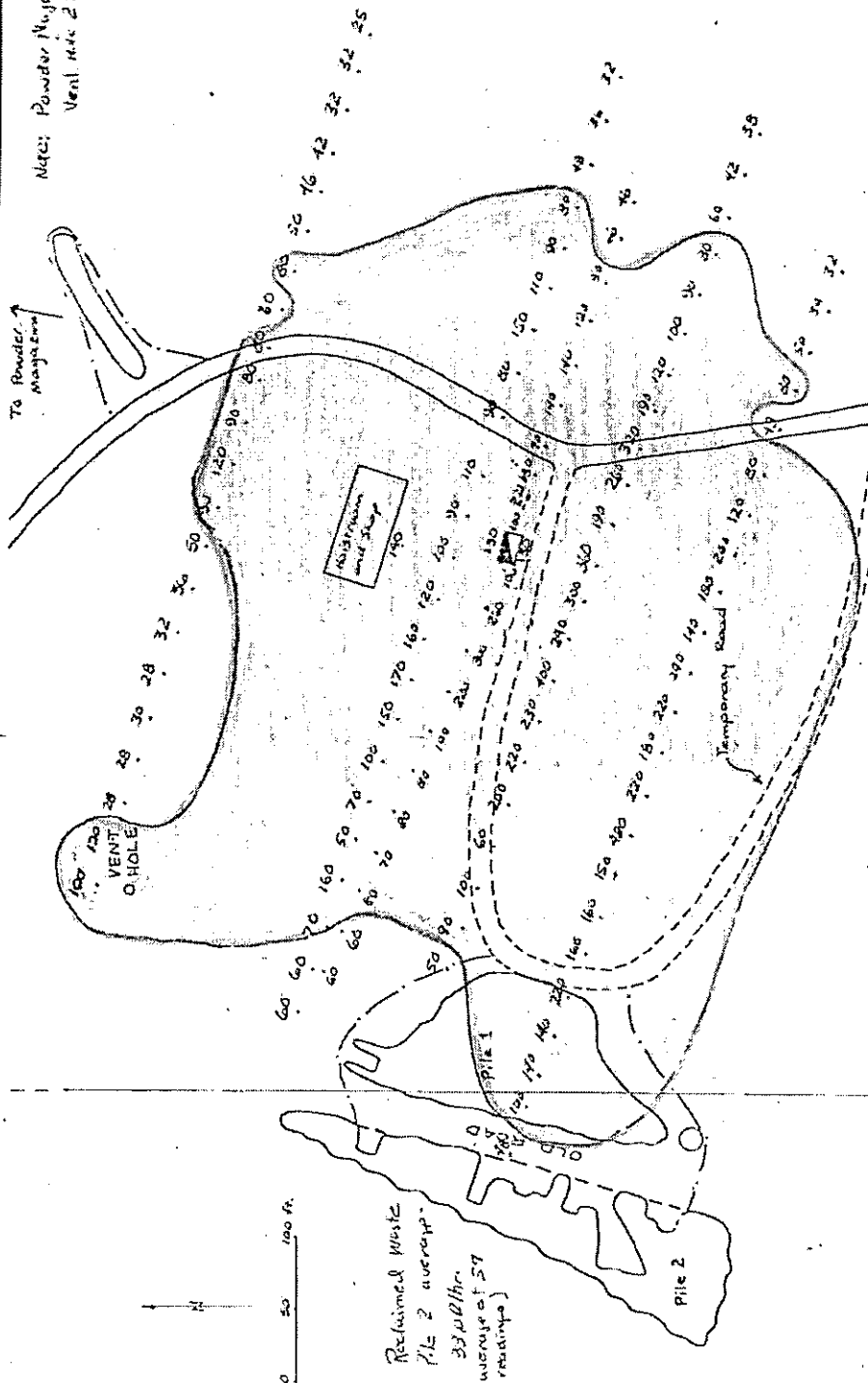
Was a condition of Noncompliance encountered during inspection? / /Yes /~~XX~~/No
If Yes, prepare Noncompliance Report.

Was an Undesirable Event encountered during inspection? / /Yes /~~XX~~/No
If Yes, prepare Undesirable Event Report.

Personnel Responsible for Conducting Inspection: David R. Sitzler

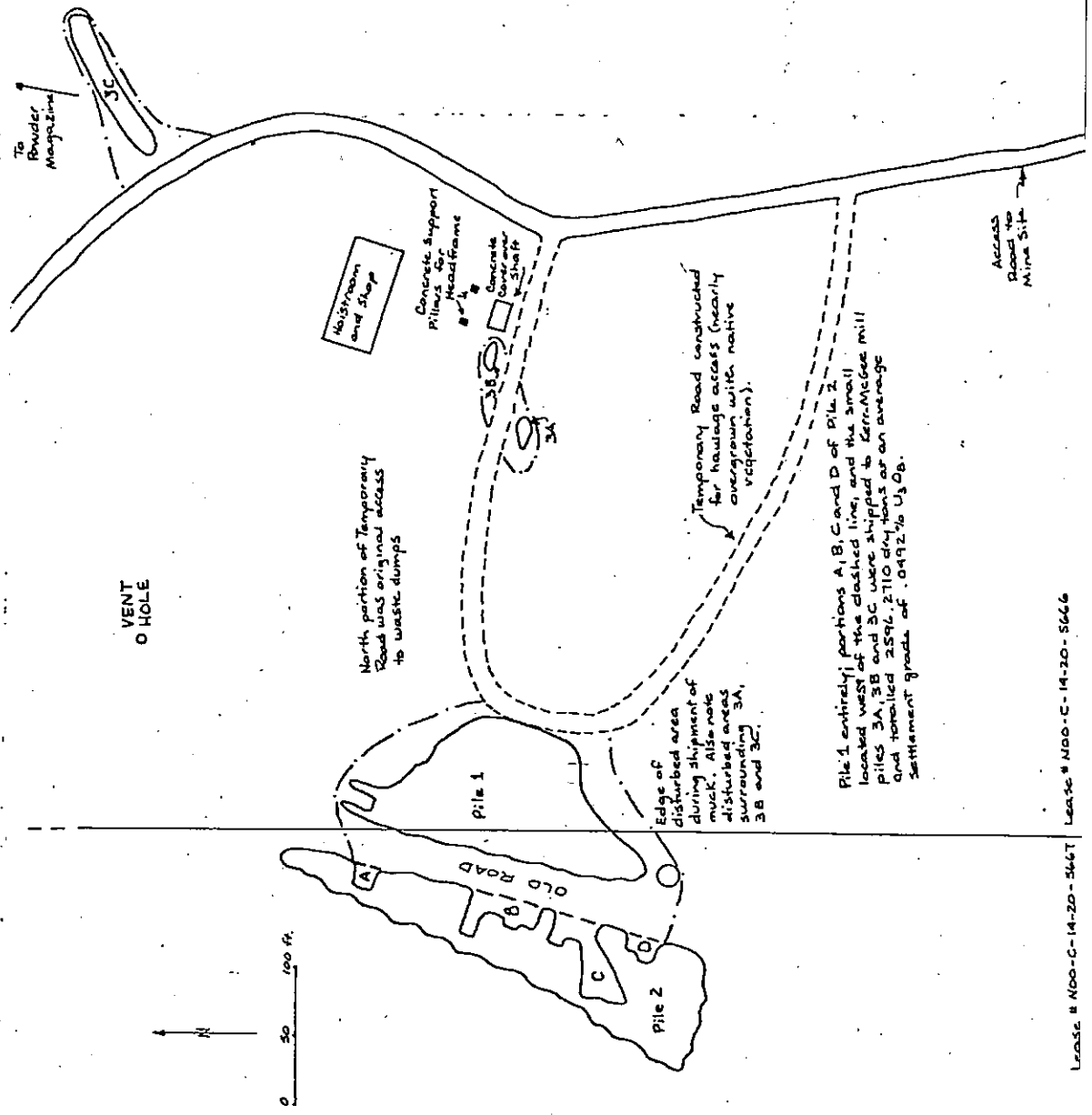
Original: Files
cc: Chron

Neer: Powder Magazine 11/24/78
Vent Hole 2: 10 p2/hr



Area shaded orange has gamma levels exceeding 0.5 Rem per year (90 p2/hr) over background

All readings in Micro Röntgen per hour (p2/hr)
All readings taken from 3 ft above the ground with an Eberline P1011-7 Micro R Meter



LEASE # N00-C-14-20-566T LEASE # N00-C-14-20-5666

2-10 Chenoweth, William L., and McLemore, Virginia T.,

"Uranium Mines and Deposits in the Grants district, Cibola and

McKinley Counties, New Mexico," December 1991, Doc. No. 4078, pdf pp. 14, 19.

Number	Mine Name	Tons Ore	Pounds U ₃ O ₈	%U308	Pounds V ₂ O ₅	%V ₂ O ₅	Type of deposit	Host Rock ⁴	Periods of Production/Shipper
15N.18W.12.244	Hogback #3-5	6,354	24,234	0.19	2,954	0.03	carbonaceous shale	Kd	1952-1954 - Tucker, Hyde, Davenport; 1955-1956-Hyde Uranium Co.; 1957-1958-Calumet and Hecla; 1958-Mathis and Mathis; 1959-See Tee Mining Co.; 1960-Windsor Mining Co.
13N.9W.7.221	Isabella (Section 7)	76,748	237,060	0.15			sandstone	Jmp	1959-1961-Phillips Petroleum Co.; 1961-1962-KSN Mining Co.
14N.11W.35.120	Lost Mine	10	4	0.02	4	0.02	sandstone	Jmb	1954-Berryhill and Elkins
15N.14W.12.423	Mac #1	60,109	289,125	0.24			sandstone	Jmb	1968-Homestake-Sapin; 1968-1970-United Nuclear-Homestake
15N.13W.18.442	Mac #2	31,194	109,009	0.14			sandstone	Jmb	1968-Homestake-Sapin; 1968-1970-United Nuclear-Homestake
13N.9W.20.144	Malpais Raise	42,070	198,492	0.24			sandstone	Jmp	1958-Holly Minerals; 1958-1961-See Tee Mining Group
13N.9W.23.233	Marquez Mine	712,911	3,724,047	0.26			sandstone	Jmp	1958-1964-Calumet and Hecla; 1965-1966-United Nuclear Corp.
14N.10W.11.112	Mary #1 (Dysart #3)	357,262	794,063	0.11			sandstone	Jmw	1959-1962-Boyles Brothers; 1962-Entrada Corp.; 1964-Stella Dysart; 1964-1965-Homestake-Sapin
13N.9W.20.321	Mesa Top Mine	108,261	512,965	0.24	144,610		sandstone	Jmp	1954-1957-Lea Exploration Co.; 1957-1958-Holly Minerals
13N.10W.4.244	Pat - Junior - Section 4 (Dakota Mine)	5,069	12,645	0.12	2,478		sandstone	Jmw,Kd	1952-1959-Dakota Mining Co.; 1962-1963-Farris Mines, Inc.
13N.9W.19.420	Poison Canyon	217,066	1,004,574	0.23	338,094		sandstone	Jmp	1952-1959-Haystack Mountain Development Corp.; 1960-1962-Farris Mines Inc.
14N.11W.28.113	Red Cap Group (T Group)	195	497	0.13	951	0.24	limestone	Jt	1952-1953-Navajo Development Co.; 1953-Fitzhugh & Doerrie
13N.10W.16.134	Red Point Lode	482	1,223	0.13	746	0.07	limestone	Jt	1952-1955-R.M. Shaw
14N.11W.20.144	Red Top Mines	165	390	0.12	1,287	0.39	limestone	Jt	1955-Red Top Uranium Mining Co.
14N.9W.34.424	Sandstone	1,034,255	3,540,829	0.17			sandstone	Jmw	1959-1963-Phillips Petroleum Co.; 1963-1970-United Nuclear Corp.
13N.9W.1.200	Section 1 (13N-9W) mined through Cliffside	148,066	1,699,137	0.57			sandstone	Jmw	1967, 1969-1970-Kerr McGee; 1969-1970-National Lead Co.
15N.16W.3.332	Section 3 (15N-16W) Santa Fe-Christensen (Rats Nest Mine)	324	1,836	0.28	404		carbonaceous sandstone (coal)	Kd	1957-George Christensen; 1957-1958-Rem Uranium Co.
13N.10W.5.144	Section 5 (13N-10W)	23	54	0.12			sandstone	Kd	1958-Westvaco
13N.9W.8.114	Section 8 (13N-9W) (Spencer Shaft)	47,808	165,319	0.17			sandstone	Jmp	1958-1960-United Western; 1961-Hyde and Casper; 1964-1966-W.D. Tripp; 1966-1967-James J. Goode
14N.10W.10.244	Section 10 (14N-10W)	130,767	510,935	0.20			sandstone	Jmw	1957-1962-Kernac Nuclear; 1964-Homestake-Sapin
14N.10W.12.411	Section 12 (14N-10)	74,975	211,873	0.14			sandstone	Jmw	1961-Anderson Development Corp.; 1962-1963-Stella Dysart
13N.9W.13.334	Section 13 (13N-9W) SW1/4 (mined through Rialto shaft)	1,689	6,312	0.19			sandstone	Jmp	1962-1963-Febco Mines, Inc.
14N.10W.15.441	Section 15 (14N-10W)	1,213,814	3,625,924	0.15			sandstone	Jmw	1958-1968-Homestake-Sapin; 1961-1965-Rio de Oro; 1968-1970-United Nuclear-Homestake
14N.9W.17.323	Section 17 (14N-9W)	544,164	2,315,182	0.21			sandstone	Jmw	1960-1964-Kernac Nuclear; 1965-1970-Kerr McGee

Occurrence number	Mine name	Production ¹ class	Host ² rock	Periods of production/Shipper
15N.14W.12.423	³ Mac #1	c	Jmb	1976-1978, 1980 - United Nuclear-Homestake
15N.14W.12.134	Mariano Lake (Section 12)	d	Jmb	1977-1982 - Gulf
17N.16W.35.200	N.E. Church Rock (2 shafts)	d	Jmw	1972-1982 - United Nuclear
17N.16W.35.200	N.E. Church Rock #1	d	Jmw	1976-1985 - Kerr McGee
17N.16W.36.100	N.E. Church Rock #1-E	d	Jmw	1979-1985 - Kerr McGee
17N.16W.27.200	N.E. Church Rock #2	d	Jmw	1978-1982 - Kerr McGee
13N.9W.30.143	Piedra Trieste (Section 30)	a	Jt	1979-1981 - Todilto Exp. & Dev.
13N.9W.19.420	³ Poiston Canyon	c	Jmp	1976-1978 - Reserve
15N.13W.21.142	Ruby #1 } mined through	d	Jmb	1976-1979 - Western Nuclear
15N.13W.25.224	Ruby #3 and #4 } same decline	d	Jmb	1980-1982 - Western Nuclear
15N.13W.25.224	Ruby #3 and #4	d	Jmb	1980-1982, 1984-1985 - Western Nuclear
14N.9W.34.424	³ Sandstone	d	Jmw	1974-1980 - United Nuclear
13N.9W.1.200	^{3,4} Section 1 (13N-9W) mined through Cliffside	d	Jmw	1971-1982 - Kerr McGee
14N.10W.10.244	³ Section 10 (14N-10W)	c	Jmw	1980 - Cobb
14N.10W.12.411	³ Section 12 (14N-10W)	c	Jmw	1978-1982 - Cobb; 1980 - United Nuclear
14N.10W.13.413	Section 13 (14N-10W)	c	Jmw	1977-1981 - United Nuclear-Homestake; 1981 - Homestake
14N.10W.15.441	³ Section 15 (14N-10W)	d	Jmw	1971-1981 - United Nuclear-Homestake; 1981 - Homestake
13N.9W.16.441	Section 16 (13N-9W) mined through Dog-Flea mines	b	Jmp	1973 - United Nuclear-Homestake
14N.9W.17.323	³ Section 17 (14N-9W)	d	Jmw	1971-1985 - Kerr McGee
14N.9W.18.420	^{3,4} Section 18 (14N-9W) mined through Section 17	d	Jmw	1971-1982 - Kerr McGee
14N.9W.19.411	Section 19 (14N-9W)	d	Jmw	1978-1985 - Kerr McGee
14N.9W.20.114	^{3,4} Section 20 (14N-9W) mined through Section 17	d	Jmw	1971-1979 - Kerr McGee
14N.10W.22.223	³ Section 22 (14N-10W)	d	Jmw	1971-1985 - Kerr McGee
14N.10W.23.134	³ Section 23 (14N-10W)	d	Jmw	1971-1982 - United Nuclear-Homestake; 1981-1989 - Homestake
16N.17W.23.221	Section 23 (16N-17W)	a	Jmw	1975 - Grace Nuclear (in situ production)
14N.10W.24.332	³ Section 24 (14N-10W)	d	Jmw	1971-1985 - Kerr McGee

2-12 Mineral Lease Rentals form, undated, Doc. No. 14048.

MINERAL LEASE RENTALS

January

Lease No.	T.	R.	Acreage	Lease Date	Rental	Remarks
Nava jo-3560	14 N.	10 W.	160.00	1.-10.-58	800.00	HSP
03-Cibola	13 N.	8 W.	1,734.20	9.-1.-64	5.00	Pipeline-Land Uses
Turnbull Claim	7 N.	9 E.	Mine	10.-8.-65	1,500.00	Harpoon, Inc.
NM-063640	16 N.	16 W.	R. of Way	1.-1.-64	25.00	Paid up till 12/31/69

February

Seboyeta Claim	11 N.	6 W.	24,217.43	2.-6.-64	6,054.36	UNC (25¢ per acre)
NM-70-0071	13 N.	9 W.	641.04	2.-10.-66	1,923.50	HSP (\$3.00 " " ")
Turnbull Claim	7 N.	9 E.	Mine	10.-8.-65	1,500.00	Harpoon, Inc.

March

NM 67-19	12 N.	10 W.	640.16	3.-1.-62	32.01	HSP
NM 67-20	13 N.	9 W.	640.00	" " "	32.00	"
NM 67-21	14 N.	11 W.	640.00	" " "	32.00	"
NM 67-26	14 N.	12 W.	640.00	" " "	32.00	"
NM 67-22	14 N.	12 W.	641.24	" " "	32.10	UNC
NM 67-23	14 N.	10 W.	640.00	" " "	32.00	"
NM 67-24	14 N.	11 W.	160.00	" " "	8.00	"
NM 67-25	15 N.	11 W.	640.00	" " "	32.00	"
NM 60-169	14 N.	9 W.	640.00	3.-11.-55	1,920.00	HSP (\$3.00 per acre)
NM 60-161	14 N.	9 W.	640.00	3.-24.-64	1,920.00	Cliffside Mine (UNC)
SFP-9578	16 N.	16 W.	2,515.92	3.-21.-57	2,516.00	Quinta (\$1 per acre)"
SFP-9587	13 N.	10 W.	640.00	3.-15.-64	640.00	" " " "
SFP-9442	13 N.	10 W.	639.36	3.-16.-64	639.50	" " " "
SFP-9588	13 N.	9 W.	640.00	3.-15.-64	640.00	" " " "
SFP-9589	13 N.	9 W.	960.00	3.-15.-64	960.00	" " " "
Turn Bull Claim	7 N.	9 E.	Mine	10.-8.-65	1,500.00	Harpoon, Inc.

April

Turn Bull Claim	7 N.	9 E.	Mine	10.-8.-65	1,500.00	Harpoon, Inc.
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May

NM 61-737	13 N.	9 W.	240.00	5.-2.-56	720.00	HSP (4-Corners=40%)
SFP-9450	14 N.	10 W.	7,716.48	5.-10.-55	7,716.48	"
SFP-9451	14 N.	10 W.	3,200.00	5.-10.-55	3,200.00	"
Nava jo-3613	15 N.	12 W.	160.00	5.-21.-58	800.00	" (Rent + Royalty)
" -3614	15 N.	12 W.	159.19	" " "	795.95	" " " "
" -3615	15 N.	12 W.	160.00	" " "	800.00	" " " "
" -3616	15 N.	12 W.	159.16	" " "	795.80	" " " "
" -3617	15 N.	12 W.	159.56	" " "	797.80	" " " "
" -3618	15 N.	12 W.	160.00	" " "	800.00	" " " "
" -3621	15 N.	12 W.	160.00	" " "	800.00	" " " "
" -3622	15 N.	12 W.	160.00	" " "	800.00	" " " "
" -3624	15 N.	12 W.	160.00	" " "	800.00	" " " "
" -3625	15 N.	12 W.	159.92	" " "	799.60	" " " "
" -3626	15 N.	12 W.	159.96	" " "	799.80	" " " "
" -3627	15 N.	12 W.	160.00	" " "	800.00	" " " "
" -3628	15 N.	12 W.	160.00	" " "	800.00	" " " "
" -3629	15 N.	12 W.	80.00	" " "	400.00	" " " "
" -3633	15 N.	12 W.	160.00	" " "	800.00	" " " "
" -3634	15 N.	12 W.	160.00	" " "	800.00	" " " "
" -3639	15 N.	12 W.	160.00	" " "	800.00	" " " "
" -3640	15 N.	12 W.	160.00	" " "	800.00	" " " "

May (cont.)

Lease No.	T.	R.	Acreage	Lease Date	Rental	Remarks
Navajo-3658	15 N.	13 W.	160.00	5.-21.-58	800.00	HSP (Rent + Royalty)
" -3659	15 N.	13 W.	160.67	" " "	803.35	" " " "
" -3660	15 N.	13 W.	160.00	" " "	800.00	" " " "
" -3661	15 N.	13 W.	160.73	" " "	803.65	" " " "
" -3662	15 N.	13 W.	160.31	" " "	801.55	" " " "
" -3665	15 N.	13 W.	156.72	" " "	783.60	" " " "
" -3667	15 N.	13 W.	158.96	" " "	794.80	" " " "
" -3668	15 N.	13 W.	160.00	" " "	800.00	" " " "
" -3670	15 N.	13 W.	160.00	" " "	800.00	" " " "
" -3671	15 N.	13 W.	160.00	" " "	800.00	" " " "
" -3672	15 N.	13 W.	160.00	" " "	800.00	" " " "
" -3673	15 N.	13 W.	160.00	" " "	800.00	" " " "
" -3674	15 N.	13 W.	160.00	" " "	800.00	" " " "
" -3675	15 N.	13 W.	160.00	" " "	800.00	" " " "
" -3678*	15 N.	13 W.	160.00	" " "	160.00	" " " "
" -3679*	15 N.	13 W.	160.00	" " "	160.00	" " " "
" -3680*	15 N.	13 W.	160.00	" " "	160.00	" " " "
" -3681*	15 N.	13 W.	160.00	" " "	160.00	" " " "
" -3682	15 N.	13 W.	160.00	" " "	800.00	" " " "
" -3685	15 N.	13 W.	160.00	" " "	800.00	" " " "
" -3686	15 N.	13 W.	160.00	" " "	800.00	" " " "
" -3687	15 N.	13 W.	160.00	" " "	800.00	" " " "
" -3688	15 N.	13 W.	160.00	" " "	800.00	" " " "
" -3689	15 N.	13 W.	160.00	" " "	800.00	" " " "
" -3694	15 N.	13 W.	160.00	" " "	800.00	" " " "
" -3695	15 N.	13 W.	160.00	" " "	800.00	" " " "
" -3696	15 N.	13 W.	160.00	" " "	800.00	" " " "
" -3699*	15 N.	13 W.	160.80	" " "	160.80	" " " "
" -3700	15 N.	13 W.	164.00	" " "	820.00	" " " "
" -3701	15 N.	13 W.	160.00	" " "	800.00	" " " "
" -3702	15 N.	13 W.	160.00	" " "	800.00	" " " "
" -3704	15 N.	13 W.	160.00	" " "	800.00	" " " "
" -3664	15 N.	13 W.	157.68	5.-29.-58	788.40	" " " "
" -3705	15 N.	13 W.	160.00	" " "	800.00	" " " "

* - Production Royalty paid during Lease Year.

N.M. BL-544	14 N.	9 W.	640.00	5.-16.-64	1,280.00	UNC (\$2.00 per acre)
Turn Bull Claim	7 N.	9 E.	Mine	10.-8.-65	1,500.00	Harpoon, Inc.
W-027567	28 N.	103W.	1,280.00	5.-2.-66	320.00	UNC (25¢ per acre)
W-027577	28 N.	102W.	960.00	" " "	240.00	UNC " " "

June

Berryhill	14 N.	11 W.	640.00	6.-4.-64	1,500.00	UNC
Turn Bull Claim	7 N.	9 E.	Mine	10.-8.-65	1,500.00	Harpoon, Inc.
HOCO Proj. 1	9 N.	8 E.	Mine	6.-11.-65	875.00	" "
HOCO Proj. 2	9 N.	8 E.	Mine	" " "	1,000.00	" "
Pena Lease, B-2	15 N.	9 W.	644.00	6.-27.-66	322.00	UNC
Pena Lease, D-2	15 N.	9 W.	641.32	" " "	320.66	"
Pena Lease, C-2	15 N.	9 W.	10,640.00	" " "	5,320.00	"

July

Navajo-3676	15 N.	13 W.	160.00	7.-1.-58	800.00	HSP (Rent + Royalty)
" -3677	15 N.	13 W.	160.00	7.-2.-58	800.00	" " " "
SFP-9591	16 N.	16 W.	1,519.46	7.-25.-57	1,519.46	UNC
SFP-9701	16 N.	16 W.	602.52	7.-2.-62	602.52	"
Turn Bull Claim	7 N.	9 E.	Mine	10.-8.-65	1,500.00	Harpoon, Inc.
W-0-28060	27 N.	103W.	236.68	7.-2.-66	59.25	UNC (25¢ per acre)

August

<u>Lease No.</u>	<u>T.</u>	<u>R.</u>	<u>Acres</u>	<u>Lease Date</u>	<u>Rental</u>	<u>Remarks</u>
Navajo-5305	15 N.	14 W.	160.00	8.-3.- 59	800.00	HSP (Rent + Royalty)
" -3703	15 N.	13 W.	160.00	8.-5.- 58	800.00	" " " "
" -3623	15 N.	12 W.	160.00	8.-8.- 58	800.00	" " " "
" -3666	15 N.	13 W.	158.48	" " "	792.40	" " " "
" -3669	15 N.	13 W.	160.00	" " "	800.00	" " " "
" -3630	15 N.	12 W.	160.00	8.-11.-58	800.00	" " " "
" -3635	15 N.	12 W.	160.00	" " "	800.00	" " " "
" -3636	15 N.	12 W.	160.00	" " "	800.00	" " " "
" -3648	15 N.	12 W.	160.00	8.-21.-58	800.00	" " " "
SFP-9669	16 N.	17 W.	4,766.92	8.-10.-61	4,767.00	UNC
Turn Bull Claim	7 N.	9 E.	Mine	10.-8.-65	1,500.00	Harpoon, Inc.
Wood-Br. Lease	14 N.	9 W.	320.00	8.-28.-62	81.25	UNC

September

Navajo-7210	15 N.	12 W.	1.3158	7.-1.- 62	32.90	HSP (Airstrip Lease)
" -7211	15 N.	12 W.	3.6761	" " "	91.90	" " "
" -7212	15 N.	12 W.	1.2595	" " "	31.50	" " "
SFP-9674	16 N.	16 W.	3,200.00	9.-21.-65	3,200.00	UNC
Turn Bull Claim	7 N.	9 E.	Mine	10.-8.-65	1,500.00	Harpoon, Inc.

October

Navajo-3698	15 N.	13 W.	160.00	10.-17.-58	800.00	HSP (Rent + Royalty)
" -5679	16 N.	16 W.	160.00	10.-16.-59	240.00	UNC (Business Lease)
N.M. W-286	14 N.	9 W.	640.00	10.-18.-64	100.00	UNC (Water Rights)
N.M. G.F.-1018	14 N.	10 W.	470.00	10.-1.- 61	14.10	paid till: 10/1/68
Turn Bull Claim	7 N.	9 E.	Mine	10.-8.- 65	1,500.00	Harpoon, Inc.

November

Esperanza Cl.	6 S.	27 E.	Mine	11.-18.-64	20,000.00	Harpoon, Inc.
Turn Bull Cl.	7 N.	9 E.	Mine	10.-8.- 65	1,500.00	" "
Glenda Claims	14 N.	11 W.	640.00	11.-14.-64	750.00	UNC (Berryhill)

December

HOCO-Project	Probably additional Royalty due at end of each year (8,3/4%)					
Turn Bull Claim	7 N.	9 E.	Mine	10.-8.-65	1,500.00	Harpoon, Inc.

First of each Year

W-027576	} Maps and Reports to be sent to Commissioner of Public Lands.
W-027577	
W-028060	

MAC Nine
#1

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**2-13 Miscellaneous Information Regarding Mac No. 1 Mine,
provided by William L. Chenoweth, undated, Doc. No. 20270, pp. 2, 4-6.**

Mac No. 1 Mine

Sec. 12, 15-14

United Nuclear-Homestake Partners obtained a lease on an Indian Allotment in the SE/4 of Sec. 12, 15-14 in 1958 to run for ten years. Unless production was obtained during the ten year lease term the lease could not be renewed. To comply with the production requirements a shaft was started in Dec. 1967. In March 1968 the shaft was 260 feet deep and 10 gpm was coming into the shaft. The shaft was stopped at 400 feet to get out some ore before the May 21 deadline stipulated in the lease. In May 1968 sinking was resumed and a station was started at the 430-foot level. In June 1968 the shaft was bottomed at 515 foot depth and a second level was started at 485 feet. The lower level was designed to be the below-ore haulageway but it was in the Brushy Basin shale and the small quantity of water at the Brushy Basin-Poison Canyon contact caused the below-ore haulageway to become so boggy it was impossible to make timber hold or maintain a road-bed. By Aug. 1968 the futility of the bottom level was realized and all equipment was moved to the sandstone ore horizon and the bottom level was abandoned.

First production was 418 tons in May 1968 but production did not exceed 1000 tons per month until April 1969. The ore intervals in the Poison Canyon sandstone are quite highgrade but dilution in mining brings the grade down to .20% to .25% grade.

As of 1-1-70 the mine had produced 25,000 tons of .22% ore.

Discovery of uranium in the Morrison Formation, in the Poison Canyon area, seven miles east of Haystack Butte was made in January 1951. This discovery created a new geologic formation to prospect. A lease on the Martinez allotment was issued to the Dakota Mining Co. on October 30, 1952 for the NE¼ Section 4, T.13N., R.10W. Mining from a surface exposure began in November 1952. Drilling in 1955 and 1956 discovered an ore body that would be mined underground.

On June 11, 1952, a lease was issued to Tucker, Hyde and Davenport for Eunice Becenti's allotment in the NW¼ Section 28, T.15N., R.17W. Here, uranium had been found in the Dakota Sandstone on the Gallup Hogback. Production from an open pit began in June 1952.

Drilling by Kermac Nuclear Fuels, in 1957, located an ore body on the D. Begay allotment in its NE¼ Section 32, T.15N., R.11W. in the West Ranch area. This ore body, in the Morrison Formation, would not be mined until 1960 via an 810-foot-long decline. The mine was called the Moe No. 5 after a mining contractor E.P. Moe.

Exploration drilling in 1956 in the vicinity of the Diamond No. 2 mine in the Dakota Sandstone on the Gallup Hogback located an ore body on Naomi Becenti's allotment in the SW¼ Section 28, T.15N., R.17W. This allotment was leased by Four Corners Uranium Corp. in 1955. Production began in 1958 via a 1,000-foot-long drift from the Diamond No. 2 mine.

Drilling by the Black Jack Corp. in the Smith Lake area in 1957 and 1958 discovered an ore deposit covering all four allotments in Section 12, T.15N., R.13W. The host was a sandstone bed in the Westwater Canyon Member of the Morrison Formation. The leases were assumed by the Lance Corp. who sank an 825-foot-deep shaft on the property. The first ore was shipped in September 1959. The mine was named the Black Jack No. 1.

Continued exploration drilling in the Smith Lake area by the Black Jack Corp. discovered an ore deposit in the Poison Canyon Sandstone of the Morrison Formation in April 1959. The ore deposit occurred in two allotments (NW and NE) of Section 18, T.15N., R.13W. The Lance Corp. acquired the leases, sank a 330-foot-deep shaft and shipped the first ore in December 1959. (*Black Jack No. 2*)

The Bureau of Indian Affairs held a lease sale for allotments in the Smith Lake-Pinedale area in May 1958. Homestake-Sapin Partners was the successful bidder on several leases near the Black Jack No. 2 mine. Since the leases would become invalid on May 21, 1968 if production had not been achieved by that date, the company began a drilling project in that area in 1967 to find extensions of the Black Jack No. 2 ore trend.

Drilling to the northwest located its Mac No. 1 ore body in the SE¼ Section 18, T.15N., R.14W. and to the southeast, the Mac No. 2 ore body was found in the SE¼ Section 18, T.15N., R.13W. During the sinking of the 288-foot-deep shaft on the Mac No. 2, an

initial ore shipment was made in April 1968. At the Mac No. 1, the first ore was also shipped in April 1968 during the sinking of the 525-foot-deep shaft. Thus, the leases were not cancelled.

In March 1969, Gulf Mineral Resources announced the discovery of an ore body in the Mariano Lake area. This discovery represented the northwest extension of the Mac No. 2, Black Jack No. 2 and Mac No. 1 ore trend in the Poison Canyon sandstone of the Morrison Formation. A 519-foot-deep shaft was sunk on an allotment in the NW¼ Section 12, T.15N., R.14W. Mining of the ore body in the NE¼ began in late 1977 and continued until 1981.

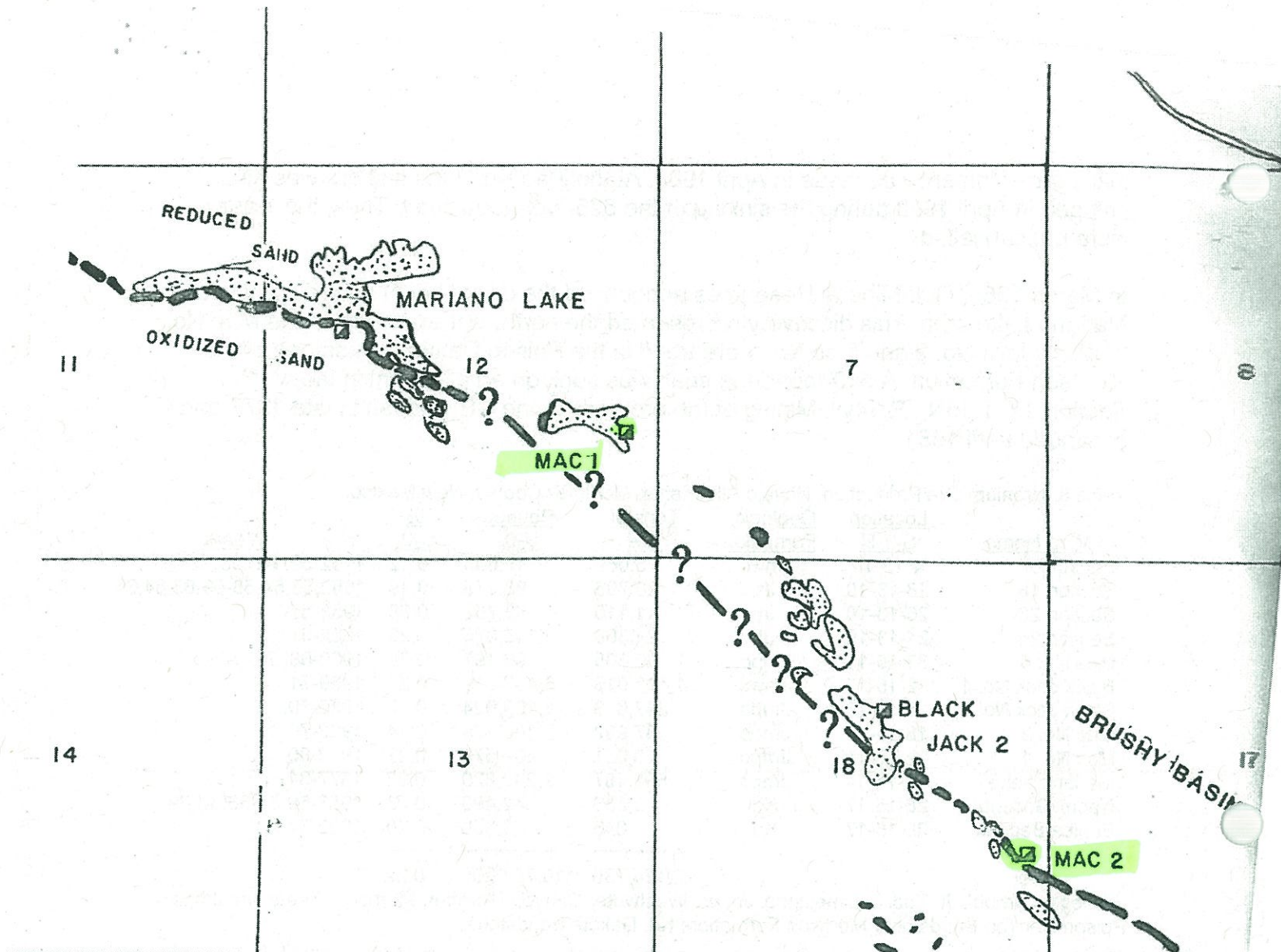
Table 3. Uranium Ore Production, Navajo Allotments, McKinley County, New Mexico.

<u>Mine Name</u>	<u>Location</u>	<u>Geologic</u>	<u>Tons of</u>	<u>Pounds</u>	<u>%</u>	<u>Years</u>
	<u>S-T-R</u>	<u>Formation</u>	<u>Ore</u>	<u>U₃O₈</u>	<u>U₃O₈</u>	
Pat/Junior	4-13-10	Jmwc	5,069	12,645	0.12	1952-59, 62, 63
Section 18	18-13-10	Jt	25,796	98,175	0.19	1952, 53, 54, 56-59, 63, 64, 66
Section 26	26-13-10	Jt	11,110	83,752	0.38	1952-57
Section 24	24-13-10	Jt	24,368	115,075	0.23	1952-57
Moe No. 5	32-15-11	Jmpc	22,605	96,197	0.21	1960-68, 72, 78
Black Jack No. 1	12-15-13	Jmwc	1,442,013	6,487,019	0.22	1959-71
Black Jack No. 2	18-15-13	Jmpc	247,613	1,129,004	0.23	1959-70
Mac No. 2	18-15-13	Jmpc	37,992	106,179	0.14	1968-70
Mac No. 1	12-15-14	Jmpc	93,031	407,573	0.22	1968-80
Mariano Lake	12-15-14	Jmpc	505,487	2,249,829	0.22	1977-81
Naomi Becenti	28-15-17	Kd	8,536	42,499	0.25	1958-59, 64-66, 68, 69
Eunice Becenti	28-15-17	Kd	846	3,350	0.20	1952-54
Total			2,424,736	10,791,297	0.22	

Geologic Symbol: Jt, Todilto Limestone; Jmwc, Westwater Canyon Member, Morrison Formation; Jmpc, Poison Canyon Sandstone, Morrison Formation; Kd, Dakota Sandstone.

CANONCITO NAVAJO RESERVATION

This separate reservation is located approximately 30 miles west of Albuquerque, New Mexico, in Cibola, Bernalillo and Sandoval Counties. This reservation is now known as the Tohajiilee Chapter of the Navajo Nation. An aerial survey of this area by Calument and Hecla, Inc. in 1954, located an anomaly in the Morrison Formation. The company leased the SE¼, Section 22, T.10N., R.3W. from Antonio and Salina Chavez on March 1, 1955 as this quarter section was an allotment to a Navajo family. The lease was approved by the Bureau of Indian Affairs on March 21, 1955. Prior to the lease, Calument and Hecla drilled behind the anomaly and discovered a small ore body in a sandstone bed in the Recapture Member of the Morrison Formation. During 1955, the company produced 192 tons of ore containing 821 pounds of U₃O₈ and averaging 0.21% U₃O₈ from an underground mine.



13 SHAFT (PRODUCTION IN APPENDIX 1)

14 DECLINE (PRODUCTION IN APPENDIX 1)



URANIUM MINERALIZATION OF ANY STRATIGRAPHIC HORIZON, APPROX. BOUNDARIES, PRODUCTION IN APPENDIX 1, SEE TABLE FOR TYPE OF DEPOSIT & STRATIGRAPHIC HORIZON.



URANIUM MINERALIZED DEPOSIT NOT MINED



APPROXIMATE EXTENT OF OXIDATION FRONT IN LOWER "ORE" SAND OF BRUSHY BASIN MEMBER (FISHMAN AND REYNOLDS, 1982, 1986, WESTERN NUCLEAR FILES, 1981; PHILLIPS PETROLEUM DATA, 1977)



AP

Map # 5

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URANIUM DEPOSITS & MINES IN THE SMITH LAKE DISTRICT, MCKINLEY COUNTY, NEW MEXICO